lenovo

ThinkCentre
Hardware Maintenance Manual

Machine Types: 3317, 4013, 4478, 5043, 5237, 5393, 5526, and 6674.

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Note: Before using this information and the product it supports, be sure to read and understand Chapter 2 “Safety information” on page 3 and Appendix A “Notices” on page 207.

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Chapter 1. About this manual

This manual contains service and reference information for ThinkCentre® computer machine types listed on the front cover. All the information in this manual is intended only for trained Service Providers who are familiar with Lenovo® computer products. Before using this information and the product it supports, be sure to read and understand the Chapter 2 “Safety information” on page 3 and Appendix A “Notices” on page 207.

The “Symptom-to-FRU Index” chapter and the “Additional service information” chapter apply to all ThinkCentre computers.

This manual includes a complete field replaceable unit (FRU) part number list for each machine type listed on the front cover. If you have Internet access, the FRU part number lists are also available at: http://www.lenovo.com/support

Important safety information

Be sure to read and understand all caution and danger statements in this manual before performing any of the instructions.

Veuillez lire toutes les consignes de type DANGER et ATTENTION du présent document avant d'exécuter les instructions.

Lesen Sie unbedingt alle Hinweise vom Typ "ACHTUNG" oder "VORSICHT" in dieser Dokumentation, bevor Sie irgendwelche Vorgänge durchführen

Leggere le istruzioni introdotte da ATTENZIONE e PERICOLO presenti nel manuale prima di eseguire una qualsiasi delle istruzioni

Certifique-se de ler todas as instruções de cuidado e perigo neste manual antes de executar qualquer uma das instruções

Es importante que lea todas las declaraciones de precaución y de peligro de este manual antes de seguir las instrucciones.

تأكد من قراءة كل التحذيرات الموجودة في هذا الكتاب قبل اتباع هذه التعليمات .

执行任何说明之前，请确保已阅读本书中的所有警告和危险声明。

執行任何指示前，請確實閱讀本書中的所有警告及危險聲明。

ודאו שקראתם את כל הודעות האזהרה והסכנה במסמך זה לפני שתבצעו פעולה כלשהי.

본 사용 설명서에 기재된 내용을 실행하기 전에 모든 주의사항 및 위험사항을 숙지하십시오.

Important information about replacing the RoHS compliant FRUs

RoHS, the Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive (2002/95/EC) is a European Union legal requirement affecting the global electronics industry. RoHS requirements must be implemented on Lenovo products placed on the market and sold in the European Union after June 2006. Products on the market before June 2006 are not required to have RoHS compliant parts. If the parts are not compliant originally, replacement parts can also

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be noncompliant, but in all cases, if the parts are compliant, the replacement parts must also be compliant.

Note: RoHS and non-RoHS FRU part numbers with the same fit and function are identified with unique FRU part numbers.

Lenovo plans to transition to RoHS compliance well before the implementation date and expects its suppliers to be ready to support Lenovo's requirements and schedule in the EU. Products sold in 2005, will contain some RoHS compliant FRUs. The following statement pertains to these products and any product Lenovo produces containing RoHS compliant parts.

RoHS compliant ThinkCentre parts have unique FRU part numbers. Before or after June, 2006, failed RoHS compliant parts must always be replaced using RoHS compliant FRUs, so only the FRUs identified as compliant in the system HMM or direct substitutions for those FRUs can be used.

Products marketed before June 2006		**Products marketed after June 2006**	
Current or original part	**Replacement FRU**	**Current or original part**	**Replacement FRU**
Non-RoHS	Can be Non-RoHS	Must be RoHS	Must be RoHS
Non-RoHS	Can be RoHS		
Non-RoHS	Can sub to RoHS		
RoHS	Must be RoHS		

Note: A direct substitution is a part with a different FRU part number that is automatically shipped by the distribution center at the time of order.

Chapter 2. Safety information

This chapter contains the safety information that you need to read and understand before servicing a computer.

General safety

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during and after maintenance.
- When lifting any heavy object:
  1. Ensure you can stand safely without slipping.
  2. Distribute the weight of the object equally between your feet.
  3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
  4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back. *Do not attempt to lift any objects that weigh more than 16 kg (35 lb) or objects that you think are too heavy for you.*
- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.
- Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Keep your tool case away from walk areas so that other people will not trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.
  Remember: Metal objects are good electrical conductors.
- Wear safety glasses when you are: hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly before returning the machine to the customer.

Electrical safety

CAUTION:
Electrical current from power, telephone, and communication cables can be hazardous. To avoid personal injury or equipment damage, disconnect the attached power cords, telecommunication systems, networks, and modems before you open the server/workstation covers, unless instructed otherwise in the installation and configuration procedures.

Observe the following rules when working on electrical equipment.

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Important: Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents. Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Disconnect all power before:
  - Performing a mechanical inspection
  - Working near power supplies
  - Removing or installing Field Replaceable Units
- Before you start to work on the machine, unplug the power cord. If you cannot unplug it, ask the customer to power-off the wall box that supplies power to the machine and to lock the wall box in the off position.
- If you need to work on a machine that has exposed electrical circuits, observe the following precautions:
  - Ensure that another person, familiar with the power-off controls, is near you.
    Remember: Another person must be there to switch off the power, if necessary.
  - Use only one hand when working with powered-on electrical equipment; keep the other hand in your pocket or behind your back.
    Remember: There must be a complete circuit to cause electrical shock. By observing the above rule, you may prevent a current from passing through your body.
  - When using testers, set the controls correctly and use the approved probe leads and accessories for that tester.
  - Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

  Observe the special safety precautions when you work with very high voltages; these instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.
- Regularly inspect and maintain your electrical hand tools for safe operational condition.
- Do not use worn or broken tools and testers.
- *Never assume* that power has been disconnected from a circuit. First, *check* that it has been powered-off.
- Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, nongrounded power extension cables, power surges, and missing safety grounds.
- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive; such touching can cause personal injury and machine damage.
- Do not service the following parts with the power on when they are removed from their normal operating places in a machine:
  - Power supply units
  - Pumps
  - Blowers and fans
  - Motor generators

  and similar units. (This practice ensures correct grounding of the units.)
- If an electrical accident occurs:
  - Use caution; do not become a victim yourself.
  - Switch off power.
  - Send another person to get medical aid.

Voltage-selection switch

Some computers are equipped with a voltage-selection switch located near the power-cord connection point on the computer. If your computer has a voltage-selection switch, ensure that you set the switch to match the voltage available at your electrical outlet. Setting the voltage-selection switch incorrectly can cause permanent damage to the computer.

If your computer does not have a voltage-selection switch, your computer is designed to operate only at the voltage provided in the country or region where the computer was originally purchased.

If you relocate your computer to another country, be aware of the following:

- If your computer does not have a voltage-selection switch, do not connect the computer to an electrical outlet until you have verified that the voltage provided is the same as it was in the country or region where the computer was originally purchased.
- If your computer has a voltage-selection switch, do not connect the computer to an electrical outlet until you have verified that the voltage-selection switch is set to match the voltage provided in that country or region.

If you are not sure of the voltage provided at your electrical outlet, contact your local electric company or refer to official Web sites or other literature for travelers to the country or region where you are located.

Safety inspection guide

The intent of this inspection guide is to assist you in identifying potentially unsafe conditions on these products. Each machine, as it was designed and built, had required safety items installed to protect users and service personnel from injury. This guide addresses only those items. However, good judgment should be used to identify potential safety hazards due to attachment of features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock).
- Explosive hazards, such as a damaged CRT face or bulging capacitor
- Mechanical hazards, such as loose or missing hardware

The guide consists of a series of steps presented in a checklist. Begin the checks with the power off, and the power cord disconnected.

Checklist:

1. Check exterior covers for damage (loose, broken, or sharp edges).
2. Power-off the computer. Disconnect the power cord.
3. Check the power cord for:
   a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and frame ground.
   b. The power cord should be the appropriate type as specified in the parts listings.
   c. Insulation must not be frayed or worn.
4. Remove the cover.

5. Check for any obvious alterations. Use good judgment as to the safety of any alterations.
6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Check that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Handling electrostatic discharge-sensitive devices

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

Notes:

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people while handling the part.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

  Note: The use of a grounding system is desirable but not required to protect against ESD damage.

  – Attach the ESD ground clip to any frame ground, ground braid, or green-wire ground.
  – Use an ESD common ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
  – Use the round ground-prong of the ac plug on ac-operated computers.

Grounding requirements

Electrical grounding of the computer is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

Safety notices (multi-lingual translations)

The caution and danger safety notices in this section are provided in the following languages:

- English
- Arabic
- Brazilian/Portuguese
- Chinese (simplified)
- Chinese (traditional)

- French
- German
- Hebrew
- Italian
- Korean
- Spanish

DANGER

Electrical current from power, telephone and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedure**s.
- **Connect and disconnect cables as described in the following tables when installing, moving, or opening covers on this product or attached devices.**

To Connect	To Disconnect
1. Turn everything OFF. 2. First, attach all cables to devices. 3. Attach signal cables to connectors. 4. Attach power cords to outlet. 5. Turn device ON.	1. Turn everything OFF. 2. First, remove power cords from outlet. 3. Remove signal cables from connectors. 4. Remove all cables from devices.

CAUTION:
When replacing the lithium battery, use only Part Number 45C1566 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of. *Do not:*

- **Throw or immerse into water**
- **Heat to more than 100°C (212°F)**
- **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

CAUTION:
When laser products (such as CD-ROMs, DVD-ROM drives, fiber optic devices, or transmitters) are installed, note the following:

- **Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.**
- **Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.**

DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following:

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

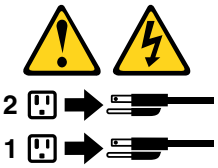
≥18 kg (37 lbs)

≥32 kg (70.5 lbs)

≥55 kg (121.2 lbs)

CAUTION:
Use safe practices when lifting.

CAUTION:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.



خـــطر

التيـار الكـهربـي المـوجـود بمصـدر الطـاقـة أو أجـهزة التليفـون أو أسـلاك الإتـصالات يشـكل خـطورة.

لـتفادي مخـاطـر الصـدمـات الكـهربـائـية:

لا تحاول توصيل أو فصل أي أسـلاك أو القـيام بعـمليـات تـركيب أو صـيانـة أوإعـادة توصـيف لـهذا المنتج أثـناء وجـود عاصـفة كـهربـائـية.

يجـب تـوصـيل كـل أسـلاك الكـهربـاء فـي مخـارج كـهربـاء ذات تـوصـيلات أسـلاك وتـوصـيلات أرضـية صحيـحة
يجـب تـوصـيل أي جـهاز سـيتم الحـاقه بـهذا المـنتج فـي مخارج كـهربـاء ذات تـوصـيلات أسـلاك صحيحة.

وإن أمـكن يـجب اسـتخدام يـد واحـدة فـقط فـي تـوصـيل أو فصـل أسلاك الإشـارة.

لا تحـاول تشغـيل أي جـهاز إذا كـان هنـاك أثـر لحـرق أو مـياه أو تـلف بالمكـونـات
يجـب فصـل أسـلاك الكـهربـاء وأنـظمة الاتصـالات وشـبكات الاتصـال وأجـهزة المـودم الملحـقة قـبل فـتح أغطية الجهاز، مـالـم يـتم طـلب خـلاف ذلك فـي التـعليـمات الخـاصة بالتـركيب والتـوصـيف.
قم بتوصيل وفصل الأسلاك كما هو موضح في الجدول التالي وذلك عند القيام بعمليات التركيب أو النقل أو فتح أغطية هذا المنتج أو الأجهزة الملحقة.

للتوصيل:	للفصل:
قم بإيقاف كل شيء.	قم بإيقاف كل شيء.
أولا، قم بتوصيل كل الأسلاك بالأجهزة.	أولا، قم بفصل كل أسلاك الكهرباء من المخرج.
قم بتوصيل أسلاك الإشارة في لموصلات.	قم بفصل أسلاك الإشارة من الموصلات.
قم بتوصيل أسلاك الكهرباء في المخارج.	قم بفصل كل الأسلاك من الأجهزة.
قم بتشغيل الجهاز.	

تنبيـــه :
عند استبدال البطارية الليثيوم، استخدم فقط رقم الجزء الخاص **Part Number 33F8354**
أو نوع أخر يكون على نفس مستوى الكفاءة يحدده لك المصنع.
اذا كان النظام الخاص يستخدم معه بطارية ليثيوم قم باستبدالها بنفس النوع الذي تم صناعته من خلال نفس المصنع. تحتوي البطارية على مادة الليثيوم ويمكن أن تنفجرفي حالة عدم استخدامها أو التعامل معها بطريقة صحيحة أو عند التخلص منها بطريقة خطأ.

لا تقم بـــ:
- **القاء البطارية أو غمرها في الماء**
- **تسخينها أعلى من ١٠٠ درجة مئوية°و(٢١٢ ° فهرنـهيت)**
- **بتصليحها أو فكها**

تخلص من البطارية طبقا للقانون أو النظام المحلي .

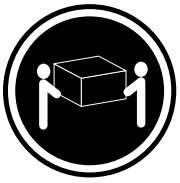
تنبيـــه :
أثناء تركيب منتجات ليزر (مثل CD-ROMsأو وحدة تشغيل DVDأو أجهزة Fiber Optic أو وحدات الارسال) يجب مراعاة الآتي:

لا تنزع الأغطية. قد ينتج عن نزع أغطية منتج الليزر انفجار أشعة الليزر شديدة الخطورة.
لا يوجد أجزاء يمكن تغييرها داخل الجهاز. قد ينتج عن استخدام تحكمات أو تعديلات أو عمل أي تصرفات أخرى تخالف ما هو محددا هنا الى انفجار أشعة شديدة الخطورة.

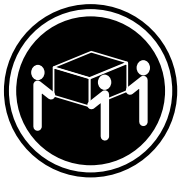
خطـــر

تحتوى بعض منتجات الليزر على الفئة دايود ليزر مدمج من الفئة Class 3Aأو Class 3B. يجب مراعاة الآتي .

أشعة الليزر عند الفتح. لا تحدق الى الاشعاع و لا تنظر اليه مباشرة بواسطة أي أجهزة مرئية وتجنب التعرض المباشر للاشعاع .



≥18 kg (37 lbs)

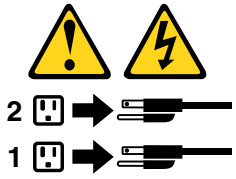


≥32 kg (70.5 lbs)

≥55 kg (121.2 lbs)

تنبيه :
يجب استخدام ممارسات آمنة عند الرفع

تنبيـــه :
لا يقم زر التحكم في التشغيل الموجود على الجهاز والمفتاح الكهربائي الموجود على لوحة التحكم بايقاف التيار الكهربائي المار بالجهاز. قد يكون للجهاز أكثر من سلك كهربائي واحد.
لايقاف التيار الكهربائي المار بالجهاز، تأكد من فصل جميع أسلاك الكهرباء من مصدر الكهرباء .



PERIGO

A corrente elétrica proveniente de cabos de alimentação, de telefone e de comunicações é perigosa.

Para evitar risco de choque elétrico:

- Não conecte nem desconecte nenhum cabo ou execute instalação, manutenção ou reconfiguração deste produto durante uma tempestade com raios.
- Conecte todos os cabos de alimentação a tomadas elétricas corretamente instaladas e aterradas.
- Todo equipamento que for conectado a este produto deve ser conectado a tomadas corretamente instaladas.
- Quando possível, utilize apenas uma das mãos para conectar ou desconectar cabos de sinal.
- Nunca ligue nenhum equipamento quando houver evidência de fogo, água ou danos estruturais.
- Antes de abrir tampas de dispositivos, desconecte cabos de alimentação, sistemas de telecomunicação, redes e modems conectados, a menos que especificado de maneira diferente nos procedimentos de instalação e configuração.
- Conecte e desconecte os cabos conforme descrito na tabela apresentada a seguir ao instalar, mover ou abrir tampas deste produto ou de dispositivos conectados.

Para Conectar:	**Para Desconectar:**
1. DESLIGUE Tudo. 2. Primeiramente, conecte todos os cabos aos dispositivos. 3. Conecte os cabos de sinal aos conectores. 4. Conecte os cabos de alimentação às tomadas. 5. LIGUE os dispositivos.	1. DESLIGUE Tudo. 2. Primeiramente, remova os cabos de alimentação das tomadas. 3. Remova os cabos de sinal dos conectores. 4. Remova todos os cabos dos dispositivos.

CUIDADO:

Ao substituir a bateria de lítio, utilize apenas uma bateria com Número de Peça 45C1566 ou um tipo de bateria equivalente recomendado pelo Se o seu sistema possui um módulo com uma bateria de lítio, substitua-o apenas por um módulo do mesmo tipo e do mesmo fabricante. A bateria contém lítio e pode explodir se não for utilizada, manuseada ou descartada de maneira correta.

Não:

- Jogue ou coloque na água
- Aqueça a mais de 100°C (212°F)
- Conserte nem desmonte

Descarte a bateria conforme requerido pelas leis ou regulamentos locais.

PRECAUCIÓN:

Quando produtos a laser (como unidades de CD-ROMs, unidades de DVD-ROM, dispositivos de fibra ótica ou transmissores) estiverem instalados, observe o seguinte:

- Não remova as tampas. A remoção das tampas de um produto a laser pode resultar em exposição prejudicial à radiação de laser. Não existem peças que podem ser consertadas no interior do dispositivo.
- A utilização de controles ou ajustes ou a execução de procedimentos diferentes dos especificados aqui pode resultar em exposição prejudicial à radiação.

PERIGO

Alguns produtos a laser contêm diodo de laser integrado da Classe 3A ou da Classe 3B. Observe o seguinte:

Radiação a laser quando aberto. Não olhe diretamente para o feixe a olho nu ou com instrumentos ópticos e evite exposição direta ao feixe.

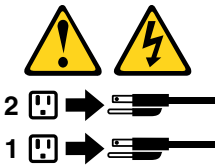
≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

CUIDADO:

Utilize procedimentos de segurança para levantar equipamentos.

CUIDADO:

O botão de controle de alimentação do dispositivo e o botão para ligar/desligar da fonte de alimentação não desligam a corrente elétrica fornecida ao dispositivo. O dispositivo também pode ter mais de um cabo de alimentação. Para remover toda a corrente elétrica do dispositivo, assegure que todos os cabos de alimentação estejam desconectados da fonte de alimentação.



危险

电源、电话和通信电缆中的电流是危险的。

为避免电击危险：

- 请勿在雷电期间连接或断开任何电缆的连接，或者对本产品进行安装、维护或重新配置。
- 将所有电源线连接到正确连线和妥善接地的电源插座。
- 将所有要连接到该产品的设备连接到正确连线的插座。
- 如果可能，请仅使用一只手来连接或断开信号电缆的连接。
- 切勿在有火、水、结构损坏迹象的情况下开启任何设备。
- 在打开设备外盖之前请断开已连接的电源线、远程通信系统、网络和调制解调器，除非在安装和配置过程中另有说明。
- 当安装、移动或打开该产品或连接设备的外盖时，请按照下表所述来连接或断开电缆的连接。

要连接	要断开连接
1. 切断所有电源。 2. 首先将所有电缆连接到设备。 3. 将信号电缆连接到接口。 4. 将电源线连接到插座。 5. 开启设备。	1. 切断所有电源。 2. 首先从插座上拔出电源线。 3. 从接口上拔出信号电缆。 4. 从设备上拔出所有电缆。

警告：
更换锂电池时，请仅使用部件号为 33F8354 的电池或制造商推荐的同类电池。如果您的系统有包含锂电池的模块，请仅使用同一制造商生产的相同模块类型来替换该模块。该电池中含有锂，如果使用、操作或处理不当，可能会发生爆炸。

切勿：

- 投入或浸入水中
- 加热到 100℃（212℉）以上
- 维修或拆卸

请按照当地法令或条例的要求处理电池。

警告：
安装激光产品（例如 CD-ROM、DVD-ROM 驱动器、光纤设备或发射设备）时，请注意以下声明：

- 请勿卸下外盖。卸下激光产品的外盖可能导致遭受激光辐射的危险。该设备内没有可维修的部件。
- 如果不按照此处指定的过程进行控制、调整或操作，则有可能导致遭受辐射的危险。

危险

某些激光产品包含嵌入式 3A 类或 3B 类激光二极管。请注意以下声明：

打开后有激光辐射。请勿注视光束，请勿直接用光学仪器查看，并请避免直接暴露在光束中。

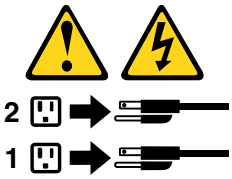
≥18 千克（37 磅）

≥32 千克（70.5 磅）

≥55 千克（121.2 磅）

警告：
抬起时请采取安全措施。

警告：
设备上的电源控制按钮和电源上的电源开关不会切断供给该设备的电流。该设备还可能有多条电源线。要切断该设备的所有电流，请确保所有电源线都与电源断开连接。



危險

電源、電話及通訊纜線上的電流都具有危險性。
若要避免觸電危險：
- 請勿在雷雨期間，連接或拔除纜線、執行安裝、維護或重新配置本產品。
- 將所有電源線連接到正確配線及接地的電源插座。
- 任何與本產品連接的設備都必須連接到配線妥當的電源插座。
- 請盡可能用單手連接或拔除信號線。
- 發生火災、水災或結構損害時，絕對不要開啟任何設備。
- 除非在安裝及配置程序中另有指示，否則在開啟裝置機蓋之前，請拔掉連接的電源線、電信系統、網路及數據機。
- 安裝、移動或開啟本產品或附屬裝置的機蓋時，請遵循下列說明連接及拔掉纜線。

連線	切斷連線
1. 關閉所有開關。 2. 首先，連接所有接線到裝置。 3. 連接信號線到接頭。 4. 連接電源線到插座。 5. 開啟裝置。	1. 關閉所有開關。 2. 首先，拔掉插座上的電源線。 3. 拔掉接頭上的信號線。 4. 拔掉裝置上所有接線。

警告：
更換鋰電池時，請僅使用產品編號 **33F8354** 或製造商所建議的同類型電池。
如果您的系統中含有鋰電池模組，請僅使用同一家製造商所生產的相同模組進行更換。
如果未以正確方式使用、處理或棄置含鋰的電池，會有爆炸的危險。
請勿：

- 沾溼或浸入水中
- 置於 **100C (212F)** 以上的高溫環境
- 修理或拆開

請按照各地區有關廢棄電池的法令和規定處理舊電池。

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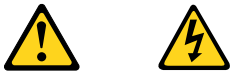
警告：
- 請勿移除機蓋。移除雷射產品的機蓋，可能會導致暴露在危險的雷射輻射中。裝置內部並無可自行維修的零件。
- 利用或執行非本文中所指定的控制、調整及執行程序，可能會導致危險的輻射外洩。

危險

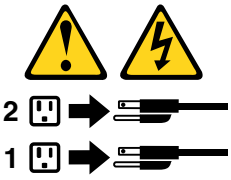
部分雷射產品含有內嵌式 **Class 3A** 或 **Class 3B** 雷射二極體。請注意下列事項：
在開啟光碟機時，會發生雷射輻射。請勿直視光束或用光學儀器直接檢視，並避免直接暴露在光束中。

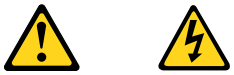
≥ 18 公斤（37 磅） ≥ 32 公斤（70.5 磅） ≥ 55 公斤（121.2 磅）

警告：
搬運時請注意安全。



警告：
裝置上的電源控制按鈕及電源供應器上的電源開關，無法關閉裝置所產生的電流。
該裝置可能有多條電源線。若要除去裝置流出的所有電流，請確認已切斷所有電源線的電源。





DANGER

Le courant électrique provenant de l'alimentation, du téléphone et des câbles de transmission peut présenter un danger.

Pour éviter tout risque de choc électrique :

- Ne manipulez aucun câble et n'effectuez aucune opération d'installation, d'entretien ou de reconfiguration de ce produit au cours d'un orage.
- Branchez tous les cordons d'alimentation sur un socle de prise de courant correctement câblé et mis à la terre.
- Branchez sur des socles de prise de courant correctement câblés tout équipement connecté à ce produit.
- Lorsque cela est possible, n'utilisez qu'une seule main pour connecter ou déconnecter les câbles d'interface.
- Ne mettez jamais un équipement sous tension en cas d'incendie ou d'inondation, ou en présence de dommages matériels.
- Avant de retirer les carters de l'unité, mettez celle-ci hors tension et déconnectez ses cordons d'alimentation, ainsi que les câbles qui la relient aux réseaux, aux systèmes de télécommunication et aux modems (sauf instruction contraire mentionnée dans les procédures d'installation et de configuration).
- Lorsque vous installez, que vous déplacez, ou que vous manipulez le présent produit ou des périphériques qui lui sont raccordés, reportez-vous aux instructions ci-dessous pour connecter et déconnecter les différents cordons.

Connexion	Déconnexion
1. Mettez les unités HORS TENSION. 2. Commencez par brancher tous les cordons sur les unités. 3. Branchez les câbles d'interface sur des connecteurs. 4. Branchez les cordons d'alimentation sur des prises. 5. Mettez les unités SOUS TENSION.	1. Mettez les unités HORS TENSION. 2. Débranchez les cordons d'alimentation des prises. 3. Débranchez les câbles d'interface des connecteurs. 4. Débranchez tous les câbles des unités.

ATTENTION:

Remplacer la pile au lithium usagée par une pile de référence identique exclusivement, (référence 45C1566), ou suivre les instructions du fabricant qui en définit les équivalences. Si votre système est doté d'un module contenant une pile au lithium, vous devez le remplacer uniquement par un module identique, produit par le même fabricant. La pile contient du lithium et peut exploser en cas de mauvaise utilisation, de mauvaise manipulation ou de mise au rebut inappropriée.

Ne pas :

- **la jeter à l'eau,**
- **l'exposer à des températures supérieures à 100°C,**
- **chercher à la réparer ou à la démonter.**

Ne pas mettre la pile à la poubelle. Pour la mise au rebut, se reporter à la réglementation en vigueur.

ATTENTION:

Si des produits à laser (tels que des unités de CD-ROM, de DVD-ROM, des unités à fibres optiques, ou des émetteurs) sont installés, prenez connaissance des informations suivantes :

- **Ne retirez pas le carter. En ouvrant l'unité de CD-ROM ou de DVD-ROM, vous vous exposez au rayonnement dangereux du laser. Aucune pièce de l'unité n'est réparable.**
- **Pour éviter tout risque d'exposition au rayon laser, respectez les consignes de réglage et d'utilisation des commandes, ainsi que les procédures décrites dans le présent manuel.**

DANGER

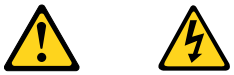
Certains produits à laser contiennent une diode à laser intégrée de classe 3A ou 3B. Prenez connaissance des informations suivantes:

Rayonnement laser lorsque le carter est ouvert. Evitez toute expositiondirecte au rayon laser. Evitez de regarder fixement le faisceau ou del'observer à l'aide d'instruments optiques.

≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

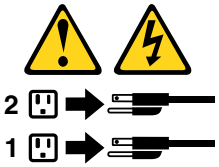
ATTENTION:

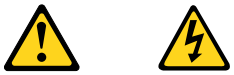
Soulevez la machine avec précaution.



ATTENTION:

L'interrupteur de contrôle d'alimentation de l'unité et l'interrupteur dubloc d'alimentation ne coupent pas le courant électrique alimentantl'unité. En outre, le système peut être équipé de plusieurs cordonsd'alimentation. Pour mettre l'unité hors tension, vous devez déconnectertous les cordons de la source d'alimentation.





VORSICHT

An Netz-, Telefon- und Datenleitungen können gefährliche Spannungen anliegen.

Aus Sicherheitsgründen:

- **Bei Gewitter an diesem Gerät keine Kabel anschließen oder lösen. Ferner keine Installations-, Wartungs- oder Rekonfigurationsarbeiten durchführen.**
- **Gerät nur an eine Schutzkontaktsteckdose mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**
- **Alle angeschlossenen Geräte ebenfalls an Schutzkontaktsteckdosen mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**
- **Die Signalkabel nach Möglichkeit einhändig anschließen oder lösen, um einen Stromschlag durch Berühren von Oberflächen mit unterschiedlichem elektrischem Potenzial zu vermeiden.**
- **Geräte niemals einschalten, wenn Hinweise auf Feuer, Wasser oder Gebäudeschäden vorliegen.**

- **Die Verbindung zu den angeschlossenen Netzkabeln, Telekommunikationssystemen, Netzwerken und Modems ist vor dem Öffnen des Gehäuses zu unterbrechen, sofern in den Installations- und Konfigurationsprozeduren keine anders lautenden Anweisungen enthalten sind.**
- **Zum Installieren, Transportieren und Öffnen der Abdeckungen des Computers oder der angeschlossenen Einheiten die Kabel gemäß der folgenden Tabelle anschließen und abziehen.**

Zum Anschließen der Kabel gehen Sie wie folgt vor	Zum Abziehen der Kabel gehen Sie wie folgt vor
1. Schalten Sie alle Einheiten AUS. 2. Schließen Sie erst alle Kabel an die Einheiten an. 3. Schließen Sie die Signalkabel an die Buchsen an. 4. Schließen Sie die Netzkabel an die Steckdose an. 5. Schalten Sie die Einheit EIN.	1. Schalten Sie alle Einheiten AUS. 2. Ziehen Sie zuerst alle Netzkabel aus den Netzsteckdosen. 3. Ziehen Sie die Signalkabel aus den Buchsen. 4. Ziehen Sie alle Kabel von den Einheiten ab.

CAUTION:

Eine verbrauchte Lithiumbatterie nur durch eine Batterie mit der Teilenummer 45C1566 oder eine gleichwertige, vom Hersteller empfohlene Batterie ersetzen. Enthält das System ein Modul mit einer Lithiumbatterie, dieses nur durch ein Modul desselben Typs und von demselben Hersteller ersetzen. Die Batterie enthält Lithium und kann bei unsachgemäßer Verwendung, Handhabung oder Entsorgung explodieren.

Die Batterie nicht:

- mit Wasser in Berührung bringen.
- über 100 C erhitzen.
- reparieren oder zerlegen.

Die örtlichen Bestimmungen für die Entsorgung von Sondermüll beachten.

ACHTUNG:

Bei der Installation von Lasergeräten (wie CD-ROM-Laufwerken, DVD- aufwerken, Einheiten mit Lichtwellenleitertechnik oder Sendern) Folgendes beachten:

- **Die Abdeckungen nicht entfernen. Durch Entfernen der Abdeckungen des Lasergeräts können gefährliche Laserstrahlungen freigesetzt werden. Das Gerät enthält keine zu wartenden Teile.**
- **Werden Steuerelemente, Einstellungen oder Durchführungen von Prozeduren anders als hier angegeben verwendet, kann gefährliche Laserstrahlung auftreten.**

VORSICHT

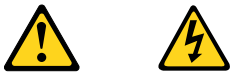
Einige Lasergeräte enthalten eine Laserdiode der Klasse 3A oder 3B. Beachten Sie Folgendes:

Laserstrahlung bei geöffneter Verkleidung. Nicht in den Strahl blicken. Keine Lupen oder Spiegel verwenden. Strahlungsbereich meiden.

≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

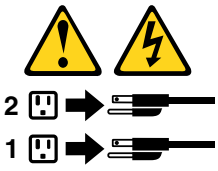
ACHTUNG:

Arbeitsschutzrichtlinien beim Anheben der Maschine beachten.



ACHTUNG:

Mit dem Netzschalter an der Einheit und am Netzteil wird die Stromversorgung für die Einheit nicht unterbrochen. Die Einheit kann auch mit mehreren Netzkabeln ausgestattet sein. Um die Stromversorgung für die Einheit vollständig zu unterbrechen, müssen alle zum Gerät führenden Netzkabel vom Netz getrennt werden.



סכנה

זרם חשמלי המועבר בכבלי חשמל, טלפון ותקשורת הוא מסוכן.

כדי להימנע מסכנת התחשמלות:

- אל תחברו או תנתקו כבלים, ואל תבצעו פעולת התקנה, תחזוקה או שינוי תצורה במוצר זה במהלך סופת ברקים.
- חברו את כל כבלי החשמל לשקע חשמל מחווט ומוארק כהלכה.
- חברו כל ציוד שיחובר למוצר זה לשקעי חשמל מחווטים כהלכה.
- במידת האפשר, השתמשו ביד אחת בלבד לחיבור או לניתוק של כבלי אותות.
- לעולם אל תפעילו ציוד כלשהו כאשר יש עדות לנזק מבני או לנזק כתוצאה מאש או ממים.
- נתקו את כבלי החשמל, מערכות התקשורת, התקני הרשת והמודמים המחוברים לפני פתיחת כיסויי ההתקן, אלא אם הליכי ההתקנה וקביעת התצורה מורים אחרת.
- בעת התקנה, העברה או פתיחת כיסויים במוצר זה או בהתקנים המחוברים, חברו ונתקו את הכבלים כמתואר בטבלה שלהלן.

כדי לחבר	כדי לנתק
1. כבו הכל. 2. ראשית, חברו את כל הכבלים להתקנים. 3. חברו את כבלי האותות למחברים. 4. חברו את כבלי החשמל לשקעים. 5. הפעילו את ההתקן.	1. כבו הכל. 2. ראשית, נתקו את כבלי החשמל מהשקעים. 3. נתקו את כבלי האותות מהמחברים. 4. הסירו את כל הכבלים מההתקנים.

זהירות:
בעת החלפת סוללת הליתיום, השתמשו רק בסוללה בעלת מק"ט 33F8354 או בסוג תואם שהומלץ על ידי היצרן. אם המערכת כוללת מודול המכיל סוללת ליתיום, החליפו אותו רק במודול מאותו סוג ומתוצרת אותו יצרן. הסוללה מכילה ליתיום, ועלולה להתפוצץ אם לא משתמשים ומטפלים בה או משליכים אותה כיאות.

לעולם:

- אל תטבלו במים
- אל תחממו לטמפרטורה הגבוהה מ-100°C (212°F)
- אל תתקנו או תפרקו

השליכו את הסוללה כנדרש לפי התקנות והחוקים המקומיים.

זהירות:
בעת התקנת מוצרי לייזר (כגון כונני תקליטורים ו-DVD, התקני סיב אופטי או משדרים), שימו לב לאזהרות הבאות:

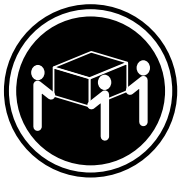
- אל תסירו את הכיסויים. הסרת הכיסויים של מוצר הלייזר עלולה לגרום לחשיפה לקרינת לייזר מסוכנת. אין חלקים ברי טיפול בתוך ההתקן.
- שינויים, שימוש בבקרות או ביצוע הליכים אחרים מאלה המתוארים כאן, עלולים לגרום לחשיפה לקרינה מסוכנת.

סכנה

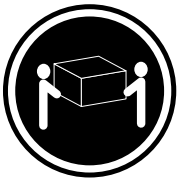
מוצרי לייזר מסוימים מכילים דיודת לייזר מסוג Class 3A או Class 3B. שימו לב לאזהרה הבאה:

כאשר הוא פתוח, המוצר פולט קרינת לייזר. אל תביטו ישירות בקרן, אל תביטו ישירות בעזרת ציוד אופטי, והימענו מחשיפה לקרן.

≤ 55 ק"ג (121.2 ליב')



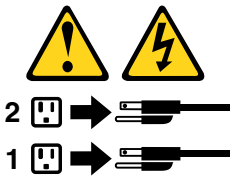
≤ 32 ק"ג (70.5 ליב')



≤ 18 ק"ג (37 ליב')

זהירות:
השתמשו בהליכים
הנאותים בעת
הרמת הציוד.

זהירות:
לחצן ההפעלה של ההתקן ומתג ההפעלה של ספק החשמל אינם מפסיקים את זרם החשמל המסופק להתקן. בנוסף, ההתקן עשוי לכלול יותר מכבל חשמל אחד. כדי לסלק את כל הזרם החשמלי מההתקן, ודאו שכל כבלי החשמל מנותקים ממקור החשמל.



PERICOLO

La corrente elettrica proveniente dai cavi di alimentazione, del telefono e di comunicazione può essere pericolosa.

Per evitare il rischio di scosse elettriche:

- **Non collegare o scollegare qualsiasi cavo oppure effettuare l'installazione, la manutenzione o la riconfigurazione del prodotto durante un temporale.**
- **Collegare tutti i fili elettrici a una presa di alimentazione correttamente cablata e dotata di messa a terra.**
- **Collegare alle prese elettriche appropriate tutte le apparecchiature che verranno utilizzate per questo prodotto.**

- **Se possibile, utilizzare solo una mano per collegare o scollegare i cavi di segnale.**
- **Non accendere assolutamente apparecchiature in presenza di incendi, perdite d'acqua o danno strutturale.**
- **Scollegare i cavi di alimentazione, i sistemi di telecomunicazione, le reti e il modem prima di aprire i coperchi del dispositivo, salvo istruzioni contrarie relative alle procedure di installazione e configurazione.**
- **Collegare e scollegare i cavi come descritto nella seguente tabella quando vengono effettuate operazioni di installazione, spostamento o apertura dei coperchi di questo prodotto o delle unità collegate.**

Per collegarsi	Per scollegarsi
1. SPEGNERE le apparecchiature. 2. Innanzitutto, collegare tutti i cavi alle unità. 3. Collegare i cavi di segnale ai connettori. 4. Collegare i cavi di alimentazione alla presa. 5. Accendere l'unità.	1. SPEGNERE le apparecchiature. 2. Innanzitutto, rimuovere i cavi di alimentazione dalla presa. 3. Rimuovere i cavi di segnale dai connettori. 4. Rimuovere tutti i cavi dalle unità.

ATTENZIONE:

Quando si sostituisce la batteria al litio, utilizzare solo il Numero parte 45C1566 o un tipo di batteria equivalente consigliato dal produttore. Se sul sistema è presente un modulo che contiene una batteria al litio, sostituirlo solo con un tipo di modulo dello stesso tipo della stessa casa di produzione. La batteria contiene litio e può esplodere se usata, maneggiata o smaltita in modo non corretto.

Non:

- **Gettare o immergere la batteria nell'acqua**
- **Riscaldarla ad una temperatura superiore ai 100 gradi C (212 gradi F)**
- **Smontarla, ricaricarla o tentare di ripararla**

Le batterie usate vanno smaltite in accordo alla normativa in vigore (DPR 915/82 e successive disposizioni e disposizioni locali).

ATTENZIONE:

Quando vengono installati prodotti laser (quali CD-ROM, unità DVD-ROM, unità a fibre ottiche o trasmittenti), tener presente quanto segue:

- **Non rimuovere gli sportelli. L'apertura di un'unità laser può determinare l'esposizione a radiazioni laser pericolose. All'interno dell'unità non vi sono parti su cui effettuare l'assistenza tecnica.**
- **L'utilizzo di controlli, regolazioni o l'esecuzione di procedure non descritti nel presente manuale possono provocare l'esposizione a radiazioni pericolose.**

PERICOLO

Alcune unità laser contengono un diodo laser di Classe 3A o Classe 3B. Tener presente quanto segue:

Aprendo l'unità vengono emesse radiazioni laser. Non fissare il fascio, non guardarlo direttamente con strumenti ottici ed evitare l'esposizione al fascio.

≥18 kg (37 lbs)

≥32 kg (70.5 lbs)

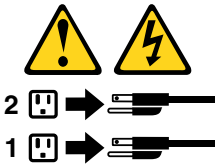
≥55 kg (121.2 lbs)

ATTENZIONE:

Prestare attenzione nel sollevare l'apparecchiatura.

ATTENZIONE:

Il pulsante di controllo dell'alimentazione presente sull'unità e l'interruttore dell'alimentatore non disattivano l'alimentazione corrente fornita all'unità. E' possibile che l'unità disponga di più cavi di alimentazione. Per disattivare l'alimentazione dall'unità, accertarsi che tutti i cavi di alimentazione siano scollegati dalla fonte di alimentazione.



위험

전원, 전화, 통신 케이블의 전류는 위험합니다.

감전의 위험을 피하려면 다음과 같이 하십시오.

- 번개가 치는 날에는 케이블을 연결 또는 분리하거나 본 제품을 설치, 보수, 재구성하지 마십시오.

- 모든 전원 코드는 올바르게 접지된 전기 콘센트에 연결하십시오.

- 본 제품에 연결될 장치는 올바르게 배선된 콘센트에 연결하십시오.

- 신호 케이블을 연결 또는 분리할 때 가능하면 한 손만을 사용하십시오.

- 불 또는 물로 인한 손상이나 구조적인 손상이 있을 경우 장치의 전원을 절대 켜지 마십시오.

- 설치 및 구성 과정에 별도의 지시 사항이 없는 경우, 장치의 덮개를 열기 전에 연결된 전원 코드, 원격 통신 시스템, 네트워크, 모뎀을 분리하십시오.

- 본 제품이나 연결된 장치를 설치, 이동하거나 덮개를 열 때 다음 표와 같은 순서로 케이블을 연결하거나 분리하십시오.

연결할 때:	분리할 때:
1. 모든 장치의 전원을 끄십시오. 2. 먼저 모든 케이블을 장치에 연결하십시오. 3. 커넥터에 신호 케이블을 연결하십시오. 4. 콘센트에 전원 코드를 연결하십시오. 5. 장치의 전원을 켜십시오.	1. 모든 장치의 전원을 끄십시오. 2. 먼저 콘센트에서 전원 코드를 분리하십시오. 3. 커넥터에서 신호 케이블을 분리하십시오. 4. 장치에서 모든 케이블을 분리하십시오.

주의:
배터리를 교환할 때는 Part Number 33F8354 또는 제조업체에서 지정한 동일한 종류의 제품을 사용하십시오. 사용자의 시스템이 리튬 배터리를 포함하는 모듈일 경우, 동일한 제조업체에서 동일한 모듈 유형으로 생산된 제품으로 교체하십시오. 배터리에는 리튬이 함유되어 있어 잘못 사용, 취급 또는 폐기할 경우 폭발의 위험이 있습니다.

사고를 방지하려면 다음 사항을 준수하십시오.

- 배터리를 물 속에 던지거나 침수시키지 마십시오.

- 100℃(212°F) 이상 가열하지 마십시오.

- 수리하거나 분해하지 마십시오.

배터리를 폐기할 때는 법령 또는 회사의 안전 수칙에 따라 폐기하십시오.

주의:
CD-ROM, DVD-ROM 장치, 광섬유 장치 또는 송신 장치와 같은 레이저 제품을 설치할 때, 다음과 같은 취급 주의사항을 참고하십시오.

- 덮개를 열지 마십시오. 덮개를 열면 레이저 복사 에너지에 노출될 위험이 있습니다. 장치 내부에는 사용자가 조정하거나 수리할 수 있는 부품이 없습니다.

- 규정된 것 이외의 절차 수행, 제어 조정 등의 행위로 인해 해로운 레이저 복사에 노출될 수 있습니다.

위험

일부 장비에는 임베디드 클래스 3A 또는 클래스 3B 레이저 다이오드가 있습니다. 다음 주의사항에 유의하십시오.

드라이브가 열리면 레이저 복사 에너지가 방출됩니다. 광선이 눈에 직접 쏘이지 않도록 하십시오. 나안 또는 광학 기구를 착용한 상태에서 광선을 직접 바라보지 않도록 하십시오.

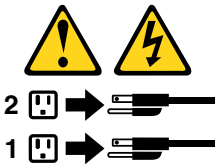
≥18 kg (37 lbs)

≥32 kg (70.5 lbs)

≥55 kg (121.2 lbs)

주의:
제품을 들어 올릴 때
안전 규제를 따르십시오.

주의:
장치의 전원 제어 버튼 및 전원 공급 장치의 전원 스위치를 사용하여 장치에 공급되는 전기를 차단하지 마십시오. 장치는 둘 이상의 코드를 가지고 있을 수 있습니다. 장치에서 모든 전원을 차단하려면 콘센트에서 코드가 모두 분리되어 있는지 확인하십시오.



PELIGRO

La corriente eléctrica procedente de cables de alimentación, teléfonos y cables de comunicación puede ser peligrosa.

Para evitar el riesgo de descarga eléctrica:

- **No conecte ni desconecte los cables ni realice ninguna tarea de instalación, mantenimiento o reconfiguración de este producto durante una tormenta eléctrica.**
- **Conecte todos los cables de alimentación a tomas de corriente debidamente cableadas y conectadas a tierra.**
- **Cualquier equipo que se conecte a este producto también debe conectarse a tomas de corriente debidamente cableadas.**
- **Siempre que sea posible, utilice una sola mano para conectar o desconectar los cables de señal.**
- **No encienda nunca un equipo cuando hay señales de fuego, agua o daños estructurales.**

- **Desconecte los cables de alimentación, los sistemas de telecomunicaciones, las redes y los módems conectados antes de abrir las cubiertas de los dispositivos, a menos que se indique lo contrario en los procedimientos de instalación y configuración.**
- **Conecte y desconecte los cables, como se describe en la tabla siguiente, cuando instale, mueva o abra las cubiertas de este producto o de los dispositivos conectados.**

Para conectar	Para desconectar
1. APÁGUELO todo. 2. En primer lugar, conecte todos los cables a los dispositivos. 3. Conecte los cables de señal a los conectores. 4. Enchufe los cables de alimentación a las tomas de corriente. 5. Encienda el dispositivo.	1. APÁGUELO todo. 2. En primer lugar, desenchufe los cables de alimentación de las tomas de corriente. 3. Desconecte los cables de señal de los conectores. 4. Desconecte todos los cables de los dispositivos.

PRECAUCIÓN:

Cuando sustituya una batería de litio, utilice solamente una batería número de pieza 45C1566 u otra de tipo equivalente recomendada por el fabricante. Si su sistema dispone de un módulo que contiene una batería de litio, reemplácelo sólo con el mismo tipo de módulo, del mismo fabricante. La batería contiene litio y puede explotar si no se utiliza, manipula o desecha correctamente.

No debe:

- **Arrojarla al agua o sumergirla en ella**
- **Exponerla a temperaturas superiores a 100°C (212°F)**
- **Repararla o desmontarla**

Deshágase de la batería según especifiquen las leyes o normas locales.

PRECAUCIÓN:

Cuando haya productos láser (como unidades de CD-ROM, unidades de DVD, dispositivos de fibra óptica o transmisores) instalados, tenga en cuenta lo siguiente:

- **No quite las cubiertas. Si quita las cubiertas del producto láser, podría quedar expuesto a radiación láser peligrosa. Dentro del dispositivo no existe ninguna pieza que requiera servicio técnico.**
- **Si usa controles o ajustes o realiza procedimientos que no sean los especificados aquí, podría exponerse a radiaciones peligrosas.**

PELIGRO

Algunos productos láser tienen incorporado un diodo láser de clase 3A o clase 3B. Tenga en cuenta lo siguiente:

Cuando se abre, queda expuesto a radiación láser. No mire directamente al rayo láser, ni siquiera con instrumentos ópticos, y evite exponerse directamente al rayo láser.

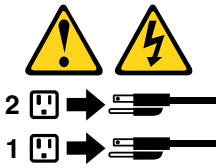
≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

PRECAUCIÓN:

Adopte procedimientos seguros al levantar el equipo.

PRECAUCIÓN:

El botón de control de alimentación del dispositivo y el interruptor de alimentación de la fuente de alimentación no desconectan la corriente eléctrica suministrada al dispositivo. Además, el dispositivo podría tener más de un cable de alimentación. Para suprimir toda la corriente eléctrica del dispositivo, asegúrese de que todos los cables de alimentación estén desconectados de la toma de corriente.



Chapter 3. General information

This chapter provides general information that applies to all the machine types supported by this manual.

Online Books folder

The Online Books folder preinstalled on your computer contains the *ThinkCentre User Guide*, which provides information about your computer to help you set up, use, and maintain your computer. It requires no Internet access to view the publication.

To view the publication, click **Start** → **All Programs** → **Online Books** → **Online Books**, then double-click the appropriate publication for your computer. The publication is also available on the Lenovo Support Web site at:
http://www.lenovo.com/support

Notes:

1. The publication is in Portable Document Format (PDF). To view the publication, you need to have the Adobe Reader program preinstalled on your computer. If the Adobe Reader program has not been installed on your computer, a message will be displayed when you attempt to view the PDF file and you will be guided through the Adobe Reader installation.
2. The publication is available in other languages on the Lenovo Support Web site at: http://www.lenovo.com/support
3. If you want to install a different language version of the Adobe Reader program rather than the version preinstalled on your computer, download the desired language version from the Adobe Web site at: http://www.adobe.com

Lenovo ThinkVantage Tools

The Lenovo ThinkVantage® Tools program guides you to a host of information sources and provides easy access to various tools to help you work more easily and securely.

Note: The Lenovo ThinkVantage Tools program is only available on computers with the Microsoft® Windows® 7 operating system from Lenovo.

To access the Lenovo ThinkVantage Tools program, click **Start** → **All Programs** → **Lenovo ThinkVantage Tools**.

ThinkVantage Productivity Center

The ThinkVantage Productivity Center program contains information sources and tools designed to make computing easy and secure. It provides easy access to various technologies, such as:

- Client Security Solution or Password Manager
- Product Recovery
- Power Manager
- Rescue and Recovery®
- System Update

Note: The ThinkVantage Productivity Center program is only available on computers preinstalled with the Microsoft Windows Vista® or Windows XP operating system from Lenovo.

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To access the ThinkVantage Productivity Center program, click **Start** → **All Programs** → **ThinkVantage** → **Productivity Center**.

Lenovo Welcome

Note: The Lenovo Welcome program is only available on computers preinstalled with Windows 7 or Windows Vista from Lenovo.

The Lenovo Welcome program introduces some innovative built-in features of Lenovo to you and guides you through some important setup tasks to help you make the most of your computer.

Access Help

The Access Help information system provides information about getting started, doing basic tasks, customizing settings for your personal preference, protecting data, expanding and upgrading, and troubleshooting.

- To open the Access Help information system on Windows 7, click **Start** → **Help and Support** → **Lenovo Access Help**.
- To open the Access Help information system on Windows Vista or Windows XP, click **Start** → **All Programs** → **ThinkVantage** → **Access Help**.

After you have opened the Access Help information system, use the left panel to make a selection from the **Contents** tab or the **Index** tab, or use the **Search** tab to find a particular word or phrase.

Additional information resources

If you have Internet access, the most up-to-date information for your computer is available at:http://www.lenovo.com/support

You can find the following information:
- CRU installation or replacement instructions
- Downloads and drivers
- Publications
- Parts information
- Troubleshooting information
- Links to other useful sources of information

Specifications

This section lists the physical specifications for your computer.

Dimensions

Width: 175 mm (6.9 inches)

Height: 412 mm (16.2 inches)

Depth: 442 mm (17.4 inches)

Weight

Maximum configuration as shipped: 11.0 kg (24.3 lbs)

Environment

- Air temperature:

  Operating: 10° to 35°C (50° to 95°F)

  Non-operating: -40° to 60°C (-40° to 140°F) (with package)

  Non-operating: -10° to 60°C (14° to 140°F) (without package)
- Humidity:

  Operating: 20% to 80% (10% per hour, non condensing)

  Non-operating: 20% to 90% (10% per hour, non condensing)
- Altitude:

  Operating: -50 to 10 000 ft (-15.2 to 3 048 m)

  Non-operating: -50 to 35 000 ft (-15.2 to 10 668 m)

Electrical input

- Input voltage:
  - Low range:

    Minimum: 100 V ac

    Maximum: 127 V ac

    Input frequency range: 50 to 60 Hz

    Voltage-selection switch setting: 115 V ac
  - High range:

    Minimum: 200 V ac

    Maximum: 240 V ac

    Input frequency range: 50 to 60 Hz

    Voltage-selection switch setting: 230 V ac

Chapter 4. General checkout

Attention

The drives in the computer you are servicing might have been rearranged or the drive startup sequence changed. Be extremely careful during write operations such as copying, saving, or formatting. Data or programs can be overwritten if you select an incorrect drive.

General error messages appear if a problem or conflict is found by an application program, the operating system, or both. For an explanation of these messages, refer to the information supplied with that software package.

Before replacing any FRUs, ensure that the latest level of BIOS is installed on the system. A down-level BIOS might cause false errors and unnecessary replacement of the system board. For more information on how to determine and obtain the latest level BIOS, see “BIOS levels” on page 203.

Use the following procedure to help determine the cause of the problem:

1. Power-off the computer and all external devices.
2. Check all cables and power cords.
3. Set all display controls to the middle position.
4. Power-on all external devices.
5. Power-on the computer.
   - Look for displayed error codes
   - Listen for beep codes
   - Look for readable instructions or a main menu on the display.

   If you **did not** receive the correct response, proceed to step 6 on page 33.

   If you **do** receive the correct response, proceed to step 7 on page 33.
6. Look at the following conditions and follow the instructions:
   - If you hear beep codes during POST, go to “Beep symptoms” on page 61.
   - If the computer displays a POST error, go to “POST error codes” on page 62.
   - If the computer hangs and no error is displayed, continue at step 7 on page 33.
7. Run the Diagnostic programs. See Chapter 5 “Diagnostics” on page 35.
   - If you receive an error, replace the part that the diagnostic program calls out or go to “Diagnostic error codes” on page 43.
   - If the test stops and you cannot continue, replace the last device tested.

Problem determination tips

Due to the variety of hardware and software combinations that can be encountered, use the following information to assist you in problem determination. If possible, have this information available when requesting assistance from Service Support and Engineering functions.

- Machine type and model
- Processor or hard disk upgrades
- Failure symptom
  - Do diagnostics indicate a failure?
  - What, when, where, single, or multiple systems?
  - Is the failure repeatable?

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  - Has this configuration ever worked?
  - If it has been working, what changes were made prior to it failing?
  - Is this the original reported failure?
- Diagnostics version
  - Type and version level
- Hardware configuration
  - Print (print screen) configuration currently in use
  - BIOS level
- Operating system software
  - Type and version level

Notes: To eliminate confusion, identical systems are considered identical only if they:

1. Are the exact machine type and models
2. Have the same BIOS level
3. Have the same adapters/attachments in the same locations
4. Have the same address jumpers/terminators/cabling
5. Have the same software versions and levels
6. Have the same Diagnostic Diskettes (version)
7. Have the same configuration options set in the system
8. Have the same setup for the operating system control files

Comparing the configuration and software setup between “working and non-working” systems will often lead to problem resolution.

Chapter 5. Diagnostics

Diagnostic programs are used to test hardware components of your computer and report operating-system-controlled settings that can cause hardware failures. There are two programs preinstalled on your computer to help you diagnose computer problems:

- Lenovo ThinkVantage Toolbox or Lenovo System Toolbox, depending on your operating system (used when you are running the Windows operating system)
- PC-Doctor for Rescue and Recovery (used when your Windows operating system does not start)

Notes:

1. You can also download the PC-Doctor for DOS diagnostic program from: http://www.lenovo.com/support. See “PC-Doctor for DOS” on page 36 for detailed information.
2. If you are unable to isolate and repair the problem yourself after running the diagnostic programs, save and print the log files created by the diagnostic programs. You will need the log files when you speak to a Lenovo technical support representative.

Lenovo ThinkVantage Toolbox

Note: The Lenovo ThinkVantage Toolbox program is only available on computers preinstalled with Windows 7 from Lenovo.

The Lenovo ThinkVantage Toolbox program helps you maintain your computer, improve computing security, diagnose computer problems, get familiar with the innovative technologies provided by Lenovo, and get more information about your computer. You can use the Diagnostics feature of the Lenovo ThinkVantage Toolbox program to test devices, diagnose problems, create bootable diagnostic media, update system drivers, and review system information.

To diagnose the computer problems by using the Lenovo ThinkVantage Toolbox program, click **Start** → **All Programs** → **Lenovo ThinkVantage Tools** → **System Health and Diagnostics** → **Diagnostics**. Follow the instructions on the screen.

For additional information about running the Lenovo ThinkVantage Toolbox program, refer to the Lenovo ThinkVantage Toolbox help system.

Lenovo System Toolbox

Note: The Lenovo System Toolbox program is only available on computers preinstalled with Windows Vista or Windows XP from Lenovo.

The Lenovo System Toolbox program is a diagnostic program that works through the Windows operating system and enables you to view symptoms and solutions for computer problems, access the Lenovo troubleshooting center, update system drivers, and review system information.

To run the Lenovo System Toolbox program, click **Start** → **All Programs** → **Lenovo Services** → **Lenovo System Toolbox**. Follow the instructions on the screen. For additional information about running the Lenovo System Toolbox program, refer to the Lenovo System Toolbox help system.

The Lenovo System Toolbox program also has problem determination aids that determine software and usage problems.

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PC-Doctor for Rescue and Recovery

The PC-Doctor for Rescue and Recovery diagnostic program is part of the Rescue and Recovery workspace on each Lenovo computer. Use the PC-Doctor for Rescue and Recovery program if you are unable to start the Windows operating system.

To run the PC-Doctor for Rescue and Recovery program from the Rescue and Recovery workspace, do the following:

1. Turn off the computer.
2. Repeatedly press and release the F11 key when turning on the computer. When you hear beeps or see a logo screen, stop pressing the F11 key. The Rescue and Recovery workspace opens after a short delay.
3. From the Rescue and Recovery workspace, select **Launch advanced Rescue and Recovery** → **Diagnose hardware**. The PC-Doctor for Rescue and Recovery diagnostic program opens.
4. Select the diagnostic test you want to run. Then, follow the instructions on the screen.

For additional information about running the PC-Doctor for Rescue and Recovery program, refer to the PC-Doctor for Rescue and Recovery help system.

PC-Doctor for DOS

You can also download the latest version of the PC-Doctor for DOS diagnostic program from http://www.lenovo.com/support. The PC-Doctor for DOS diagnostic program runs independently of the Windows operating system. Use the PC-Doctor for DOS diagnostic program if you are unable to start the Windows operating system or if the two diagnostic programs preinstalled on your computer have not been successful in isolating a possible problem. You can run the PC-Doctor for DOS diagnostic program from a diagnostic disc that you created.

Creating a diagnostic disc

This section provides instructions on how to create a diagnostic disc.

To create a diagnostic disc, do the following:

1. Download a self-starting bootable CD/DVD image (known as an ISO image) of the diagnostic program from:
   http://www.lenovo.com/support
2. Use any CD/DVD burning software to create a diagnostic disc with the ISO image.

Running the diagnostic program from a diagnostic disc

This section provides instructions on how to run the diagnostic program from a diagnostic disc that you created.

To run the diagnostic program from a diagnostic disc that you created, do the following:

1. Make sure the optical drive you want to use is set as the first boot device in the startup device sequence. See “Selecting a startup device” on page 41.
2. Make sure the computer is turned on and then insert the disc into the optical drive. The diagnostic program opens.

   Note: You can insert the disc into the optical drive when you are setting the startup device sequence. However, if you insert the disc into the optical drive when you have already entered the operating system, you need to restart the computer to access the diagnostic program.

3. Follow the instructions on the screen to select the diagnostic test you want to run.

   Note: For additional help, press the F1 key.
4. Remove the diagnostic disc from the optical drive when you complete the diagnostic process.

Navigating through the diagnostics programs

Use the cursor movement keys to navigate within the menus.

- The **Enter** key is used to select a menu item.
- The **Esc** key is used to back up to the previous menu.
- For online help select **F1**.

Running tests

There are four ways to run the diagnostic tests.

- Using the cursor movement keys, highlight **Run Normal Test** or **Run Quick Test** from the Diagnostics menu and then press **Enter**. This automatically runs a pre-defined group of tests from each test category. **Run Normal Test** runs a more extensive set of tests than does **Run Quick Test** and takes longer to complete.
- Press **F5** to automatically run all selected tests in all categories.
- From within a test category, press **Ctrl-Enter** to automatically run only the selected tests in that category.
- Using the cursor movement keys, highlight a single test within a test category, and then press **Enter**. This runs only that test.

Press **Esc** at any time to stop the testing process.

Test results (N/A, PASSED, FAILED, ABORTED) are displayed in the field beside the test description and in the test log. See “Viewing the test log” on page 38.

To select one or more tests, use the following procedure.

1. Open the corresponding test category.
2. Using the cursor movement keys, highlight the desired test.
3. Press the space bar. A selected test is marked by **>>**. Pressing the space bar again de-selects a test and removes the >>.
4. Repeat steps 2 and 3 above to select all desired tests.

Test results

Diagnostics test results produce the following error code format:

Function Code	Failure Type	DeviceID	Date	ChkDigits	Text

- **Function Code:**
  Represents the feature or function within the PC.
- **Failure Type:**
  Represents the type of error encountered.
- **DeviceID:**
  Contains the component's unit-ID which corresponds to either a fixed disk drive, removable media drive, serial or parallel port, processor, specific RIMM, or a device on the PCI bus.

- **Date:**
  Contains the date when the diagnostic test was run. The date is retrieved from CMOS and displayed using the YYYYMMDD format.
- **ChkDigits:**
  Contains a 2-digit check-digit value to ensure the following:
  - Diagnostics were run on the specified date.
  - Diagnostics were run on the specified computer.
  - The diagnostic error code is recorded correctly.
- **Text:**
  Description of the error.

Note: See “Diagnostic error codes” on page 43 for error code listings.

Quick and Full erase - hard drive

The diagnostics program offers two hard drive format utilities:

- Quick Erase Hard Drive
- Full Erase Hard Drive

The Quick Erase Hard Drive provides a DOS utility that performs the following:

- Destroys the Master Boot Record (MBR) on the hard drive.
- Destroys all copies of the FAT Table on all partitions (both the master and backup).
- Destroys the partition table.
- Provides messages that warn the user that this is a non-recoverable process.

The Full Erase Hard Drive provides a DOS utility that performs the following:

- Performs all the steps in Quick Erase.
- Provides a DOS utility that writes random data to all sectors of the hard drive.
- Provides an estimate of time to completion along with a visual representation of completion status.
- Provides messages that warn the user about non-recoverable process.

Important: Make sure that all data is backed up before using the Quick or Full Erase functions.

To select the Quick Erase or Full Erase Hard Drive utility, use the following procedure:

1. Select the UTILITY option on the toolbar and press **Enter**.
2. Select either the QUICK ERASE or FULL ERASE HARD DISK option and follow the instructions.

Viewing the test log

Errors reported by the diagnostic test will be displayed by the program as a failed test.

To view details of a failure or to view a list of test results, use the following procedure from any test category screen:

1. Press **F3** to activate the log file.
2. Press **F3** again to save the file to diskette or press **F2** to print the file.

Chapter 6. Using the Setup Utility program

You can use the Setup Utility program to view and change the configuration settings of your computer, regardless of which operating system you are using. However, the operating system settings might override any similar settings in the Setup Utility program.

This chapter provides information about the following topics to help you use the Setup Utility program:

- "Starting the Setup Utility program" on page 39
- "Viewing or changing settings" on page 39
- "Using passwords" on page 39
- "Enabling or disabling a device" on page 40
- "Selecting a startup device" on page 41
- "Exiting the Setup Utility program" on page 42

Starting the Setup Utility program

This section provides instructions on how to start the Setup Utility program.

To start the Setup Utility program, do the following:

1. Make sure your computer is turned off.
2. Repeatedly press and release the F1 key when turning on the computer. When you hear multiple beeps or see a logo screen, release the F1 key. The Setup Utility program opens.

   Note: If a password has been set, the Setup Utility program menu will not be displayed until you type the correct password. For more information, see "Using passwords" on page 39.

Viewing or changing settings

The Setup Utility program menu lists various items about the system configuration settings. To view or change the settings, start the Setup Utility program. See "Starting the Setup Utility program" on page 39. Then, follow the instructions on the screen.

When working with the Setup Utility program, you must use the keyboard. The keys used to perform various tasks are displayed at the bottom of each screen.

Using passwords

By using the Setup Utility program, you can set a password to prevent unauthorized access to your computer and data. The following options are available to help you set a power-on password or an administrator password:

- **Set Power-On Password**
- **Set Administrator Password**

You do not have to set a password to use your computer. However, using a password improves computing security. If you decide to set a password, read the following sections.

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Password considerations

A password can be any combination of up to 16 (1 to 16) alphabetic and numeric characters. For security reasons, it is recommended to use a strong password that cannot be easily compromised. To set a strong password, use the following guidelines:

Note: The Setup Utility program passwords are not case sensitive.

- Have at least eight characters in length
- Contain at least one alphabetic character and one numeric character
- Not be your name or your user name
- Not be a common word or a common name
- Be significantly different from your previous passwords

Power-on password

After you have set a power-on password using the **Set Power-On Password** option, a password prompt is displayed each time you turn on the computer. You cannot use the computer until a valid password is typed in. For more information on how to set a password, see “Setting, changing, or deleting a password” on page 40.

Administrator password

The **Set Administrator Password** option enables you to set an administrator password, which deters unauthorized users from changing configuration settings. If you are responsible for maintaining the settings of several computers, you might want to set an administrator password. For more information on how to set a password, see “Setting, changing, or deleting a password” on page 40.

After you have set an administrator password, a password prompt is displayed each time you try to access the Setup Utility program. You cannot access the Setup Utility program until a valid password is typed in.

If you have set both power-on password and administrator password, you can type either password to use your computer. However, to change any configuration settings, you must use your administrator password.

Setting, changing, or deleting a password

This section provides instructions on how to set, change, or delete a password.

To set, change, or delete a password, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 39.
2. From the Setup Utility program main menu, select **Security** → **Set Power-On Password** or **Set Administrator Password**.
3. Follow the instructions on the screen to set, change, or delete a password.

   Note: A password can be any combination of up to 16 (1 to 16) alphabetic and numeric characters. For more information, see “Password considerations” on page 40.

Enabling or disabling a device

This section provides instructions on how to enable or disable user access to a device.

SATA Controller	When this option is set to **Disabled**, all devices connected to the SATA connectors (such as the hard disk drive or the optical drive) are disabled and will not be displayed in the system configuration.
Serial Port1 Address	Use this option to control the Input/Output of the serial port.
USB Setup	Use this option to set up the USB connectors.

To enable or disable a device, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 39.
2. From the Setup Utility program main menu, select **Devices**.
3. Depending on the device you want to enable or disable, do one of the following:
   - Select **ATA Drives Setup** → **SATA Controller** to enable or disable the devices connected to the SATA connectors on the system board.
   - Select **Serial Port Setup** → **Serial Port1 Address** to enable or disable the serial port.
   - Select **USB Setup** and follow the instructions on the screen to enable or disable the USB connector(s) of your choice.
4. Select the desired settings and press Enter.
5. Press Esc to return to the Setup Utility program main menu. You might have to press Esc several times.
6. Press F10 to save and exit the Setup Utility program.

   Notes:

   a. If you do not want to save the settings, select **Exit** → **Discard Changes and Exit**.

   b. If you want to return to the default settings, press F9 or select **Exit** → **Load Optimal Defaults**.

Selecting a startup device

If your computer does not start up from a device (such as a hard disk drive or the disc in an optical drive) as expected, do one of the following to select the desired startup device.

Selecting a temporary startup device

This section provides instructions on how to select a temporary startup device. You can use the instructions in this section to start up from any startup device.

Note: Not all discs and hard disk drives are bootable.

To select a temporary startup device, do the following:

1. Turn off your computer.
2. Repeatedly press and release the F12 key when turning on the computer. When the **Startup Device Menu** opens, release the F12 key.
3. Select the desired startup device on the **Startup Device Menu** and press Enter to begin.

Note: Selecting a startup device on the **Startup Device Menu** does not permanently change the startup device sequence.

Viewing or changing the startup device sequence

This section provides instructions on how to view or permanently change the configured startup device sequence.

To view or permanently change the configured startup device sequence, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 39.
2. Select **Startup** → **Primary Boot Sequence**. Read the information displayed on the right side of the screen.
3. Select the first boot device, second boot device, and so on.
4. Press Esc to return to the **Startup** menu. Then, select the devices for the **Automatic Boot Sequence** and **Error Boot Sequence**.
5. Press Esc to return to the Setup Utility program main menu. You might have to press Esc several times.
6. Press F10 to save and exit the Setup Utility program.

   Notes:

   a. If you do not want to save the settings, select **Exit** → **Discard Changes and Exit**.

   b. If you want to return to the default settings, press F9 or select **Exit** → **Load Optimal Defaults**.

Exiting the Setup Utility program

After you finish viewing or changing settings, press Esc to return to the Setup Utility program main menu. You might have to press Esc several times. Then, you can do one of the following:

- If you want to save the new settings, press F10 to save and exit the Setup Utility program. Otherwise, your changes will not be saved.
- If you do not want to save the new settings, select **Exit** → **Discard Changes and Exit**.
- If you want to return to the default settings, press F9 or select **Exit** → **Load Optimal Defaults**.

Chapter 7. Symptom-to-FRU index

The Symptom-to-FRU index lists error symptoms and possible causes. The most likely cause is listed first. Always begin with Chapter 4 “General checkout” on page 33. This index can also be used to help you decide which FRUs to have available when servicing a computer. If you are unable to correct the problem using this index, go to “Undetermined problems” on page 65.

Notes:

1. If you have both an error message and an incorrect audio response, diagnose the error message first.
2. If you cannot run the diagnostic tests or you get a diagnostic error code when running a test, but did receive a POST error message, diagnose the POST error message first.
3. If you did not receive any error message, look for a description of your error symptoms in the first part of this index.

Hard disk drive boot error

A hard disk drive boot error can have the following causes.

Error	FRU/Action
The start-up drive is not in the boot sequence in configuration.	Check the configuration and ensure the start-up drive is in the boot sequence.
No operating system installed on the boot drive.	Install an operating system on the boot drive.
The boot sector on the start-up drive is corrupted.	The drive must be formatted, do the following: 1. Attempt to back-up the data on the failing hard disk drive. 2. Using the operating systems programs, format the hard disk drive.
The drive is defective.	Replace the hard disk drive.

Power supply problems

If you suspect a power problem, use the following procedures.

Check/Verify	FRU/Action
Check the following for proper installation. • Power Cord • On/Off Switch connector • On/Off Switch Power Supply connector • System Board Power Supply connectors • Microprocessor(s) connection	Reseat connectors
Check the power cord for continuity.	Power Cord
Check the power-on switch for continuity.	Power-on Switch

Diagnostic error codes

Refer to the following diagnostic error codes when using the diagnostic tests. See “Running tests” on page 37 for the specific type for information about the Diagnostic programs.

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In the following index, *X* can represent any number.

Diagnostic error code	FRU/Action
000-000-XXX BIOS Test Passed	**No action**
000-002-XXX BIOS Timeout	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
000-024-XXX BIOS Addressing test failure	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
000-025-XXX BIOS Checksum Value error	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
000-026-XXX FLASH data error	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
000-027-XXX BIOS Configuration/Setup error	1. **Run Setup** 2. Flash the system. See "Updating (flashing) BIOS from a disc" on page 203 3. System board
000-034-XXX BIOS Buffer Allocation failure	1. **Reboot the system** 2. Flash the system. See "Updating (flashing) BIOS from a disc" on page 203 3. Run memory test 4. System board
000-035-XXX BIOS Reset Condition detected	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
000-036-XXX BIOS Register error	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
000-038-XXX BIOS Extension failure	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. Adapter card 3. System board
000-039-XXX BIOS DMI data error	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
000-195-XXX BIOS Test aborted by user	**Information only** Re-start the test, if necessary
000-196-XXX BIOS test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file

Diagnostic error code	FRU/Action
000-197-XXX BIOS test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
000-198-XXX BIOS test aborted	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Flash the system and retest. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65
000-199-XXX BIOS test failed, cause unknown	1. Go to “Undetermined problems” on page 65 2. Flash the system and re-test 3. Replace component under function test
000-250-XXX BIOS APM failure	1. **Flash the system. See “Updating (flashing) BIOS from a disc” on page 203** 2. System board
000-270-XXX BIOS ACPI failure	1. **Flash the system. See “Updating (flashing) BIOS from a disc” on page 203** 2. System board
001-000-XXX System Test Passed	**No action**
001-00X-XXX System Error	**System board**
001-01X-XXX System Error	**System board**
001-024-XXX System Addressing test failure	**System board**
001-025-XXX System Checksum Value error	1. **Flash the system. See “Updating (flashing) BIOS from a disc” on page 203** 2. System board
001-026-XXX System FLASH data error	1. **Flash the system. See “Updating (flashing) BIOS from a disc” on page 203** 2. System board
001-027-XXX System Configuration/Setup error	1. **Run Setup** 2. Flash the system. See “Updating (flashing) BIOS from a disc” on page 203 3. System board
001-032-XXX System Device Controller failure	**System board**
001-034-XXX System Device Buffer Allocation failure	1. **Reboot the system** 2. Flash the system. See “Updating (flashing) BIOS from a disc” on page 203 3. Run memory test 4. System board
001-035-XXX System Device Reset condition detected	**System board**
001-036-XXX System Register error	**System board**

Diagnostic error code	FRU/Action
001-038-XXX System Extension failure	1. **Adapter card** 2. System board
001-039-XXX System DMI data structure error	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
001-040-XXX System IRQ failure	1. **Power-off/on system and re-test** 2. System board
001-041-XXX System DMA failure	1. **Power-off/on system and re-test** 2. System board
001-195-XXX System Test aborted by user	**Information only** Re-start the test, if necessary
001-196-XXX System test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
001-197-XXX System test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
001-198-XXX System test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and retest. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
001-199-XXX System test failed, cause unknown	1. Go to "Undetermined problems" on page 65 2. Flash the system and re-test 3. Replace component under function test
001-250-XXX System ECC error	**System board**
001-254-XXX 001-255-XXX 001-256-XXX 001-257-XXX System DMA error	**System board**
001-260-XXX 001-264-XXX System IRQ error	**System board**
001-268-XXX System IRQ1 failure	1. **Device on IRQ1** 2. System board
001-269-XXX System IRQ2 failure	1. **Device on IRQ2** 2. System board
001-270-XXX System IRQ3 failure	1. **Device on IRQ3** 2. System board
001-271-XXX System IRQ4 failure	1. **Device on IRQ4** 2. System board
001-272-XXX System IRQ5 failure	1. **Device on IRQ5** 2. System board

Diagnostic error code	FRU/Action
001-273-XXX System IRQ6 (diskette drive) failure	1. **Diskette Cable** 2. Diskette drive 3. System board
001-274-XXX System IRQ7 failure	1. **Device on IRQ7** 2. System board
001-275-XXX System IRQ8 failure	1. **Device on IRQ8** 2. System board
001-276-XXX System IRQ9 failure	1. **Device on IRQ9** 2. System board
001-277-XXX System IRQ10 failure	1. **Device on IRQ10** 2. System board
001-278-XXX System IRQ11 failure	1. **Device on IRQ11** 2. System board
001-279-XXX System IRQ12 failure	1. **Device on IRQ12** 2. System board
001-280-XXX System IRQ13 failure	1. **Device on IRQ13** 2. System board
001-281-XXX System IRQ14 (hard disk drive) failure	1. **Hard disk drive cable** 2. Hard disk drive 3. System board
001-282-XXX System IRQ15 failure	1. **Device on IRQ15** 2. System board
001-286-XXX 001-287-XXX 001-288-XXX System Timer failure	**System board**
001-292-XXX System CMOS RAM error	1. **Run Setup and re-test** 2. System board
001-293-XXX System CMOS Battery	1. **CMOS Battery** 2. System board
001-298-XXX System RTC date/time update failure	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
001-299-XXX System RTC periodic interrupt failure	**System board**
001-300-XXX System RTC Alarm failure	**System board**
001-301-XXX System RTC Century byte error	1. **Flash the system. See "Updating (flashing) BIOS from a disc" on page 203** 2. System board
005-000-XXX Video Test Passed	**No action**
005-00X-XXX Video error	1. **Video card, if installed** 2. System board
005-010-XXX 005-011-XXX 005-012-XXX 005-013-XXX Video Signal failure	1. **Video card, if installed** 2. System board

Diagnostic error code	FRU/Action
005-016-XXX Video Simple Pattern test failure	1. **Video Ram** 2. Video card, if installed 3. System board
005-024-XXX Video Addressing test failure	1. **Video card, if installed** 2. System board
005-025-XXX Video Checksum Value error	1. **Video card, if installed** 2. System board
005-027-XXX Video Configuration/Setup error	1. **Run Setup** 2. Video drivers update 3. Video card, if installed 4. System board
005-031-XXX Video Device Cable failure	1. **Video cable** 2. Monitor 3. Video card, if installed 4. System board
005-032-XXX Video Device Controller failure	1. **Video card, if installed** 2. System board
005-036-XXX Video Register error	1. **Video card, if installed** 2. System board
005-038-XXX System BIOS extension failure	1. **Video card, if installed** 2. System board
005-040-XXX Video IRQ failure	1. **Video card, if installed** 2. System board
005-195-XXX Video Test aborted by user	**Information only** Re-start the test, if necessary
005-196-XXX Video test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
005-197-XXX Video test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component called out in warning statement 4. Replace the component under test
005-198-XXX Video test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65
005-199-XXX Video test failed, cause unknown	1. Go to “Undetermined problems” on page 65 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Replace component under function test

Diagnostic error code	FRU/Action
005-2XX-XXX 005-3XX-XXX Video subsystem error	1. **Video card, if installed** 2. System board
006-000-XXX Diskette interface Test Passed	**No action**
006-0XX-XXX Diskette interface error	1. **Diskette drive Cable** 2. Diskette drive 3. System board
006-195-XXX Diskette interface Test aborted by user	**Information only** Re-start the test, if necessary
006-196-XXX Diskette interface test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
006-197-XXX Diskette interface test warning	1. **If a component is called out, make sure it is connected and/or enabled** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
006-198-XXX Diskette interface test aborted	1. **If a component is called out, make sure it is connected and/or enabled** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65
006-199-XXX Diskette interface test failed, cause unknown	1. Go to “Undetermined problems” on page 65 2. Flash the system and re-test 3. Replace component under function test
006-25X-XXX Diskette interface Error	1. **Diskette drive cable** 2. Diskette drive 3. System board
011-000-XXX Serial port Interface Test Passed	**No action**
011-001-XXX Serial port Presence	1. **Remove external serial device, if present** 2. Run setup, enable port 3. System board
011-002-XXX 011-003-XXX Serial port Timeout/Parity error	**System board**
011-013-XXX 011-014-XXX Serial port Control Signal/Loopback test failure	**System board**
011-015-XXX Serial port External Loopback failure	1. **Wrap plug** 2. System board
011-027-XXX Serial port Configuration/Setup error	1. **Run Setup, enable port** 2. Flash the system. See “Updating (flashing) BIOS from a disc” on page 203 3. System board
011-03X-XXX 011-04X-XXX Serial port failure	**System board**
011-195-XXX Serial port Test aborted by user	**Information only** Re-start the test, if necessary

Diagnostic error code	FRU/Action
011-196-XXX Serial port test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
011-197-XXX Serial port test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
011-198-XXX Serial port test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
011-199-XXX Serial port test failed, cause unknown	1. Go to "Undetermined problems" on page 65 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
011-2XX-XXX Serial port signal failure	1. **External serial device** 2. System board
014-000-XXX Parallel port Interface Test Passed	**No action**
014-001-XXX Parallel port Presence	1. **Remove external parallel device, if present** 2. Run setup, enable port 3. System board
014-002-XXX 014-003-XXX Parallel port Timeout/Parity error	**System board**
014-013-XXX 014-014-XXX Parallel port Control Signal/Loopback test failure	**System board**
014-015-XXX Parallel port External Loopback failure	1. **Wrap plug** 2. System board
014-027-XXX Parallel port Configuration/Setup error	1. **Run Setup, enable port** 2. Flash the system. See "Updating (flashing) BIOS from a disc" on page 203 3. System board
014-03X-XXX 014-04X-XXX Parallel port failure	**System board**
014-195-XXX Parallel port Test aborted by user	**Information only** Re-start the test, if necessary
014-196-XXX Parallel port test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file

Diagnostic error code	FRU/Action
014-197-XXX Parallel port test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
014-198-XXX Parallel port test aborted	1. **If a component is called out, make sure it is connected and/or enabled** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65
014-199-XXX Parallel port test failed, cause unknown	1. Go to “Undetermined problems” on page 65 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Replace component under function test
014-2XX-XXX 014-3XX-XXX Parallel port failure	1. **External parallel device** 2. System board
015-000-XXX USB (Universal Serial Bus) port Interface Test Passed	**No action**
015-001-XXX USB port Presence	1. **Remove USB device(s) and re-test** 2. System board
015-002-XXX USB port Timeout	1. **Remove USB device(s) and re-test** 2. System board
015-015-XXX USB port External Loopback failure	1. **Remove USB device(s) and re-test** 2. System board
015-027-XXX USB port Configuration/Setup error	1. **Flash the system. See “Updating (flashing) BIOS from a disc” on page 203** 2. System board
015-032-XXX USB port Device Controller failure	**System board**
015-034-XXX USB port buffer allocation failure	1. **Reboot the system** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Run memory test 4. System board
015-035-XXX USB port Reset condition detected	1. **Remove USB device(s) and re-test** 2. System board
015-036-XXX USB port Register error	**System board**
015-040-XXX USB port IRQ failure	1. **Run setup and check for conflicts** 2. Flash the system. See “Updating (flashing) BIOS from a disc” on page 203 3. System board
015-195-XXX USB port Test aborted by user	**Information only** Re-start the test, if necessary

Diagnostic error code	FRU/Action
015-196-XXX USB port test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
015-197-XXX USB port test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
015-198-XXX USB port test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65
015-199-XXX USB port test failed, cause unknown	1. Go to “Undetermined problems” on page 65 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Replace component under function test
018-000-XXX PCI (Peripheral Component Interconnect) Card Test Passed	**No action**
018-0XX-XXX PCI Card Failure	1. **Riser card, if installed** 2. System board
018-195-XXX PCI Card Test aborted by user	1. **PCI card** 2. **Information only** Re-start the test, if necessary
018-196-XXX PCI Card test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
018-197-XXX PCI Card test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
018-198-XXX PCI Card test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65
018-199-XXX PCI Card test failed, cause unknown	1. Go to “Undetermined problems” on page 65 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Replace component under function test

Diagnostic error code	FRU/Action
018-250-XXX PCI Card Services error	1. **PCI card** 2. Riser card, if installed 3. System board
020-000-XXX PCI Interface Test Passed	**No action**
020-0XX-XXX PCI Interface error	1. **PCI card** 2. Riser card, if installed 3. System board
020-195-XXX PCI Test aborted by user	**Information only** Re-start the test, if necessary
020-196-XXX PCI test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
020-197-XXX PCI test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
020-198-XXX PCI test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
020-199-XXX PCI test failed, cause unknown	1. Go to "Undetermined problems" on page 65 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
020-262-XXXPCI system error	1. **PCI card** 2. Riser card, if installed 3. System board
025-000-XXXIDE interface Test Passed	**No action**
025-00X-XXX 025-01X-XXX IDE interface failure	1. **IDE signal cable** 2. Check power supply voltages 3. Reseat IDE signal cable 4. IDE device 5. System board
025-027-XXX IDE interface Configuration/Setup error	1. **IDE signal cable** 2. Flash the system. See "Updating (flashing) BIOS from a disc" on page 203 3. Reseat IDE signal cable 4. IDE device 5. System board

Diagnostic error code	FRU/Action
025-02X-XXX 025-03X-XXX 025-04X-XXX IDE Interface failure	1. **IDE signal cable** 2. Check power supply 3. Reseat IDE signal cable 4. IDE device 5. System board
025-195-XXX IDE interface Test aborted by user	**Information only** Re-start the test, if necessary
025-196-XXX IDE interface test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
025-197-XXX IDE interface test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
025-198-XXX IDE interface test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
025-199-XXX IDE interface test failed, cause unknown	1. Go to "Undetermined problems" on page 65 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
030-000-XXX SCSI interface Test Passed	**No action**
030-00X-XXX 030-01X-XXX SCSI interface failure	1. **SCSI signal cable** 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-027-XXX SCSI interface Configuration/Setup error	1. **SCSI signal cable** 2. Flash the system. See "Updating (flashing) BIOS from a disc" on page 203 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-03X-XXX 030-04X-XXX SCSI interface error	1. **SCSI signal cable** 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-195-XXX SCSI interface Test aborted by user	**Information only** Re-start the test, if necessary

Diagnostic error code	FRU/Action
030-196-XXX SCSI interface test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
030-197-XXX SCSI interface test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
030-198-XXX SCSI interface test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
030-199-XXX SCSI interface test failed, cause unknown	1. Go to "Undetermined problems" on page 65 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
035-000-XXX RAID interface Test Passed	**No action**
035-0XX-XXX RAID interface Failure	1. **RAID signal cable** 2. RAID device 3. RAID adapter card, if installed 4. System board
035-195-XXX RAID interface Test aborted by user	**Information only** Re-start the test, if necessary
035-196-XXX RAID interface test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
035-197-XXX RAID interface test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
035-198-XXX RAID interface test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
035-199-XXX RAID interface test failed, cause unknown	1. See "Undetermined problems" on page 65 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
071-000-XXX Audio port Interface Test Passed	**No action**

Diagnostic error code	FRU/Action
071-00X-XXX 071-01X-XXX 071-02X-XXX Audio port error	1. **Run Setup** 2. Flash the system. See “Updating (flashing) BIOS from a disc” on page 203 3. System board
071-03X-XXX Audio port failure	1. **Speakers** 2. Microphone 3. Audio card, if installed 4. System board
071-04X-XXX Audio port failure	1. **Run Setup** 2. Audio card, if installed 3. System board
071-195-XXX Audio port Test aborted by user	**Information only** Re-start the test, if necessary
071-196-XXX Audio port test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
071-197-XXX Audio port test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
071-198-XXX Audio port test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65
071-199-XXX Audio port test failed, cause unknown	1. See “Undetermined problems” on page 65 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Replace component under function test
071-25X-XXX Audio port failure	1. **Speakers** 2. Audio card, if installed 3. System board
080-000-XXX Game Port interface Test Passed	**No action**
080-XXX-XXX Game Port interface Error	1. **Remove the game port device and re-test the system**
080-195-XXX Game Port interface Test aborted by user	**Information only** Re-start the test, if necessary
080-196-XXX Game Port interface test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file

Diagnostic error code	FRU/Action
080-197-XXX Game Port interface test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
080-198-XXX Game Port interface test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
080-199-XXX Game Port interface test failed, cause unknown	1. See "Undetermined problems" on page 65 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
086-000-XXX Mouse Port interface Test Passed	**No action**
086-001-XXX Mouse Port interface Presence	1. **Mouse** 2. System board
086-032-XXX Mouse Port interface Device controller failure	1. **Mouse** 2. System board
086-035-XXX Mouse Port interface Reset	1. **Mouse** 2. System board
086-040-XXX Mouse Port interface IRQ failure	1. **Run Setup** 2. Mouse 3. System board
086-195-XXX Mouse Port interface Test aborted by user	**Information only** Re-start the test, if necessary
086-196-XXX Mouse Port interface test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
086-197-XXX Mouse Port interface test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
086-198-XXX Mouse Port interface test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65

Diagnostic error code	FRU/Action
086-199-XXX Mouse Port interface test failed, cause unknown	1. See “Undetermined problems” on page 65 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Replace component under function test
089-000-XXX Microprocessor Test Passed	**No action**
089-XXX-XXX Microprocessor failure	1. **Microprocessor(s)** 2. System board
089-195-XXX Microprocessor Test aborted by user	**Information only** Re-start the test, if necessary
089-196-XXX Microprocessor test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
089-197-XXX Microprocessor test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
089-198-XXX Microprocessor test aborted	1. **Flash the system. See “Updating (flashing) BIOS from a disc” on page 203** 2. Go to “Undetermined problems” on page 65
089-199-XXX Microprocessor test failed, cause unknown	1. See “Undetermined problems” on page 65 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Replace component under function test
170-000-XXX Voltage Sensor(s) Test Passed	**No action**
170-0XX-XXX Voltage Sensor(s) failure	1. **Flash system** 2. System board
170-195-XXX Voltage Sensor(s) Test aborted by user	**Information only** Re-start the test, if necessary
170-196-XXX Voltage Sensor(s) test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
170-197-XXX Voltage Sensor(s) test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
170-198-XXX Voltage Sensor(s) test aborted	1. **If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 39** 2. Flash the system and re-test. See “Updating (flashing) BIOS from a disc” on page 203 3. Go to “Undetermined problems” on page 65

Diagnostic error code	FRU/Action
170-199-XXX Voltage Sensor(s) test failed, cause unknown	1. **See "Undetermined problems" on page 65** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
170-250-XXX 170-251-XXX Voltage Sensor(s) Voltage limit error	1. **Power supply** 2. System board
170-254-XXX Voltage Sensor(s) Voltage Regulator Module error	1. **Voltage Regulator Module (VRM)** 2. Microprocessor 3. System board
175-000-XXX Thermal Sensor(s) Test Passed	**No action**
175-0XX-XXX Thermal Sensor(s) failure	1. **Flash system** 2. System board
175-195-XXX Thermal Sensor(s) Test aborted by user	**Information only** Re-start the test, if necessary
175-196-XXX Thermal Sensor(s) test halt, error threshold exceeded	1. **Press F3 to review the log file** 2. Re-start the test to reset the log file
175-197-XXX Thermal Sensor(s) test warning	1. **Make sure the component that is called out is connected and/or enabled. See Chapter 6 "Using the Setup Utility program" on page 39** 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
175-198-XXX Thermal Sensor(s) test aborted	1. **If a component is called out, make sure it is connected and/or enabled** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Go to "Undetermined problems" on page 65
175-199-XXX Thermal Sensor(s) test failed, cause unknown	1. **See "Undetermined problems" on page 65** 2. Flash the system and re-test. See "Updating (flashing) BIOS from a disc" on page 203 3. Replace component under function test
175-250-XXX 175-251-XXX Thermal Sensor(s) limit error	1. **Check fans** 2. Check Power supply voltages 3. Microprocessor 4. System board
185-000-XXX Asset Security Test Passed	**No action**
185-XXX-XXX Asset Security failure	1. **Flash system** 2. System board
185-278-XXX Asset Security Chassis Intrusion	1. **Assure Asset Security Enabled** 2. C2 Cover Switch 3. System board
201-000-XXX System Memory Test Passed	**No action**

Diagnostic error code	FRU/Action
201-XXX-XXX System Memory error	1. **Replace the memory module called out by the test** 2. System board
202-000-XXX System Cache Test Passed	**No action**
202-XXX-XXX System Cache error	1. **Cache, if removable** 2. System board 3. Microprocessor
206-000-XXX Diskette Drive Test Passed	**No action**
206-XXX-XXX Diskette Drive error	1. **Diskette Drive Cable** 2. Check power supply voltages 3. Diskette drive 4. System board
215-000-XXX CD-ROM Drive Test Passed	**No action**
215-XXX-XXX CD-ROM Drive error	1. **CD-ROM Drive Cable** 2. Check power supply voltages 3. CD-ROM drive 4. System board
217-000-XXX Hard Disk Drive Test Passed	**No action**
217-25X-XXX 217-26X-XXX Hard Disk Drive (IDE) error	1. **Hard Disk Drive Cable** 2. Check power supply voltages 3. Reseat the hard disk drive cable 4. Hard Disk drive (IDE) 5. System board
217-28X-XXX 217-29X-XXX Hard Disk Drive (SCSI) error	1. **Hard Disk Drive Cable** 2. Check power supply voltages 3. Reseat the hard disk drive cable 4. Hard Disk drive (SCSI) 5. SCSI adapter card 6. System board
220-000-XXX Hi-Capacity Cartridge Drive Test Passed	**No action**
220-XXX-XXX Hi-Capacity Cartridge Drive error	1. **Remove the Hi-Capacity Cartridge Drive and re-test the system**
301-XXX-XXX Keyboard error	1. **Keyboard** 2. Check and test mouse 3. System board
301-000-XXX Keyboard Test Passed	**No action**
302-000-XXX Mouse Test Passed	**No action**
302-XXX-XXX Mouse error	1. **Mouse** 2. Check and test Keyboard 3. System board
303-000-XXX Joystick Test Passed	**No action**
303-XXX-XXX Joystick error	**Remove the Joystick and re-test the system**

Diagnostic error code	FRU/Action
305-000-XXX Monitor DDC Test Passed	**No action**
305-250-XXX Monitor DDC self test failure	1. **Run Setup to enable DDC** 2. Cable 3. Monitor 4. Video card 5. System board
415-000-XXX Modem Test Passed	**No action**
415-XXX-XXX Modem error	**Remove the Modem and re-test the system**

Beep symptoms

Beep symptoms are tones or a series of tones separated by pauses (intervals without sound) during POST.

The following tables describes beep symptoms.

Beep symptom	FRU/Action
2 short beeps CMOS setting error	Perform the following actions in order. 1. Start the Setup Utility program and press F10 to Save and exit. See Chapter 6 “Using the Setup Utility program” on page 39. 2. Start the Setup Utility program and press F7 to load defaults and then press F10 to Save and exit. 3. Perform a Boot-block recovery. See “Recovering from a POST/BIOS update failure” on page 204.
1 long and 2 short beeps Monitor or video adapter card error	Perform the following actions in order. 1. Make sure the monitor is properly connected to the computer. 2. Replace the video adapter card (if present). 3. Replace the system board.
1 long and 3 short beeps Keyboard error	Perform the following actions in order. 1. Make sure the keyboard is properly connected to the keyboard connector. 2. Replace the keyboard. 3. Replace the system board.
1 long and 9 short beeps BIOS ROM error	Perform the following actions in order. 1. Start the Setup Utility program and press F7 to load defaults and then press F10 to Save and exit. See Chapter 6 “Using the Setup Utility program” on page 39. 2. Perform a Boot-block recovery. See “Recovering from a POST/BIOS update failure” on page 204. 3. Replace the system board.

Beep symptom	FRU/Action
Continuos long beeps DRAM memory error	Perform the following actions in order. 1. Make sure the memory module(s) are properly seated in the connector(s). 2. Replace the memory module(s). 3. Replace the system board.

POST error codes

Each time you power-on the system, it performs a series of tests that check the operation of the system and some options. This series of tests is called the *Power-On Self-Test*, or *POST*. POST does the following operations.

- Checks some basic system-board operations
- Checks the memory operation
- Starts the video operation
- Verifies that the boot drive is working

If the POST detects a problem, an error message appears on the screen. A single problem can cause several error messages to appear. When you correct the cause of the first error message, the other error messages probably will not appear on the screen the next time you turn on the system.

POST error message	Description/Action
CMOS battery failed	The CMOS battery is no longer functional. Replace the battery.
CMOS checksum error - defaults loaded	Checksum of CMOS is incorrect. The computer loads the default configuration settings. This error might indicate that CMOS has become corrupt due to a weak CMOS battery.
CPU at nnnn	nnnn is the running speed of the microprocessor.
Press Esc to skip memory test	Pressing Esc skips the full memory test
HARD DISK INSTALL FAILURE	Cannot find or initialize the hard disk drive controller or the drive. Make sure the hard disk drive is correctly installed. If no hard disk drives are installed, make sure the hard disk drive selection in Setup is set to NONE.
Keyboard error or no keyboard present	Cannot initialize the keyboard. Make sure the keyboard is properly connected to the computer and that no keys are held pressed during POST. To purposely configure the computer without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. The BIOS then ignores the missing keyboard during POST.
Memory Test:	This message displays during a full memory test, counting down the memory areas being tested.

POST error message	Description/Action
Memory test fail	If POST detects an error during memory testing, additional information appears. This information gives specifics about the type and location of the memory error.
Press TAB to show POST screen	Pressing the TAB key permits the user to toggle between the default POST display screen and a custom POST display screen.
Error: Non-System disk or disk error Replace and press any key when ready	The BIOS was unable to find a suitable boot device. Make sure the boot drive is properly connected to the computer. Make sure you have bootable media.

Miscellaneous error messages

Message/Symptom	FRU/Action
Changing display colors	**Display/Monitor**
Computer will *not* power-off. See “Hard disk drive boot error” on page 43.	1. **Power Switch** 2. System Board 3. Riser card, if installed
Computer will *not* RPL from server	1. **Ensure that network is in startup sequence as first device or first device after diskette** 2. Ensure that network adapter is enabled for RPL 3. Network adapter (Advise network administrator of new MAC address)
Computer will *not* perform a Wake on LAN (if applicable)	1. **Check power supply and signal cable connections to network adapter** 2. Ensure that the operating system settings are set to enable Wake on LAN 3. Ensure Wake on LAN feature is enabled in Setup/Configuration (see “Starting the Setup Utility program” on page 39) 4. Ensure network administrator is using correct MAC address 5. Ensure no interrupt or I/O address conflicts 6. Network adapter (advise network administrator of new MAC address)
Dead computer. See “Hard disk drive boot error” on page 43.	1. **Power Supply** 2. System Board
Diskette drive in-use light remains on or does not light when drive is active.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
Flashing cursor with an otherwise blank display.	1. **System Board** 2. Primary Hard Disk Drive 3. Hard Disk Drive Cable

Message/Symptom	FRU/Action
Incorrect memory size during POST	1. **Run the Memory tests** 2. Memory Module 3. System Board
"Insert a Diskette" icon appears with a known-good diagnostics diskette in the first 3.5-inch diskette drive.	1. **System Board** 2. Diskette Drive Cable 3. Network Adapter
Intensity or color varies from left to right of characters and color bars	1. **Display** 2. Video adapter (if present) 3. System Board
No power or fan not running	1. **See "Hard disk drive boot error" on page 43.**
Non-system disk or disk error-type message with a known-good diagnostic diskette.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
Other display symptoms not listed above (including blank or illegible display)	1. **Display** 2. System Board
Power-on indicator or hard disk drive in-use light not on, but computer works correctly	1. Power switch/LED assembly 2. System Board
Printer problems	1. **Printer** 2. System Board
Program loads from the hard disk with a known-good diagnostics diskette in the first 3.5-inch diskette drive	1. **Run Setup** and check Startup sequence. 2. Diskette Drive 3. Diskette Drive Cable 4. System Board 5. Power Supply
RPL computer cannot access programs from its own hard disk.	1. **If network administrator is using LCCM Hybrid RPL, check startup sequence:** a. **First device - network** b. **Second device - hard disk** 2. Hard disk drive
RPL computer does not RPL from server	1. **Check startup sequence** 2. Check the network adapter LED status
Serial or parallel port device failure (system board port)	1. **External Device Self-Test OK?** 2. External Device 3. Cable 4. System Board

Message/Symptom	FRU/Action
Serial or parallel port device failure (adapter port)	1. **External Device Self-Test OK?** 2. External Device 3. Cable 4. Alternate Adapter 5. System Board
Some or all keys on the keyboard do not work	1. **Keyboard** 2. Keyboard Cable 3. System Board

Undetermined problems

This section provides instructions on how to find out the failing devices or adapters.

1. Power-off the computer.
2. Remove or disconnect the following components (if installed) one at a time.
   a. External devices (modem, printer, or mouse)
   b. Any adapters
   c. Memory modules
   d. Extended video memory
   e. External Cache
   f. External Cache RAM
   g. Hard disk drive
   h. Diskette drive
3. Power-on the computer to re-test the system.
4. Repeat steps 1 through 3 until you find the failing device or adapter.

If all devices and adapters have been removed and the problem continues, replace the system board.

Chapter 8. Replacing FRUs

Important

Be sure to read and understand the Chapter 2 “Safety information” on page 3 before replacing any FRU. These precautions and guidelines will help you work safely.

FRU replacements are to be done only by trained service technicians.

This chapter does not contain the install, remove or replace procedure for all FRUs. Only the major FRUs are documented.

Locating connectors on the front of your computer

Front connector locations shows the locations of the connectors on the front of your computer.

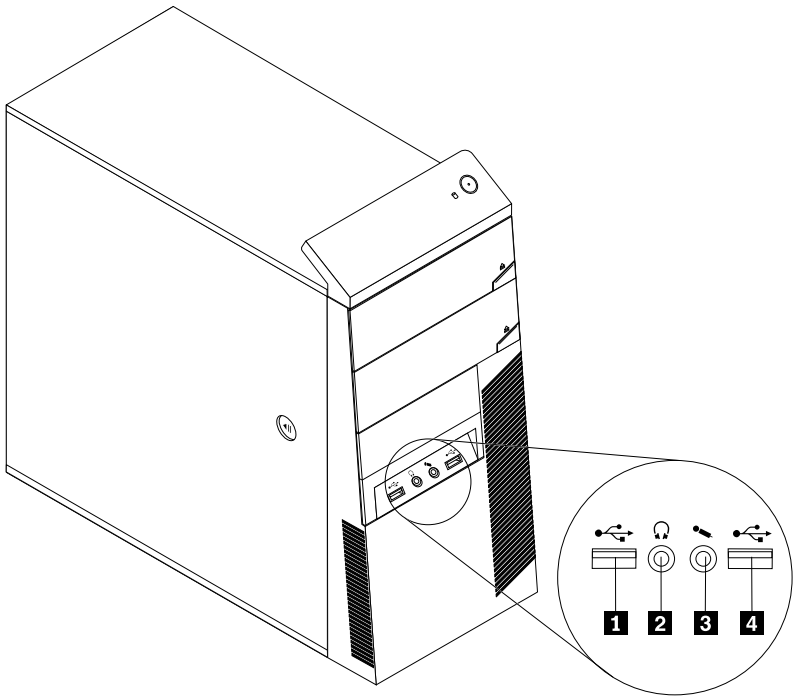

Figure 1. Front connector locations

1 USB connector
2 Headphone connector
3 Microphone connector
4 USB connector

Locating connectors on the rear of your computer

Rear connector locations shows the locations of the connectors on the rear of your computer. Some connectors on the rear of your computer are color-coded to help you determine where to connect the cables on your computer.

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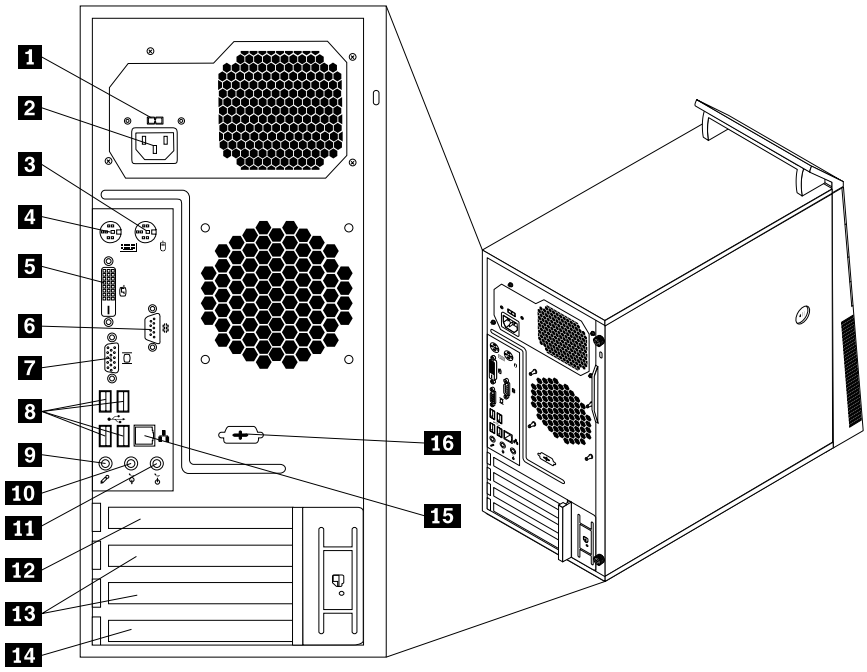


Figure 2. Rear connector locations

1 Voltage-selection switch
2 Power cord connector
3 PS/2® mouse connector
4 PS/2 keyboard connector
5 DVI monitor connector
6 Serial port
7 VGA monitor connector
8 USB connectors (4)
9 Microphone connector
10 Audio line-out connector
11 Audio line-in connector
12 PCI Express x16 graphics card slot
13 PCI Express x1 card slots (2)
14 PCI card slot
15 Ethernet connector
16 Serial port (some models)

Removing the computer cover

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove the computer cover.

CAUTION:

Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To remove the computer cover, do the following:

1. Remove any media from the drives and turn off all attached devices and the computer.
2. Unplug all power cords from electrical outlets.
3. Disconnect the cables attached to the computer. This includes power cords, Input/Output (I/O) cables, and any other cables that are connected to the computer. See “Locating connectors on the front of your computer” on page 67 and “Locating connectors on the rear of your computer” on page 67.
4. Remove any locking devices, such as a cable lock that secures the computer cover.
5. Remove the thumbscrews that secure the computer cover.
6. Press the cover-release button on the side of the computer cover and slide the computer cover to the rear to remove.

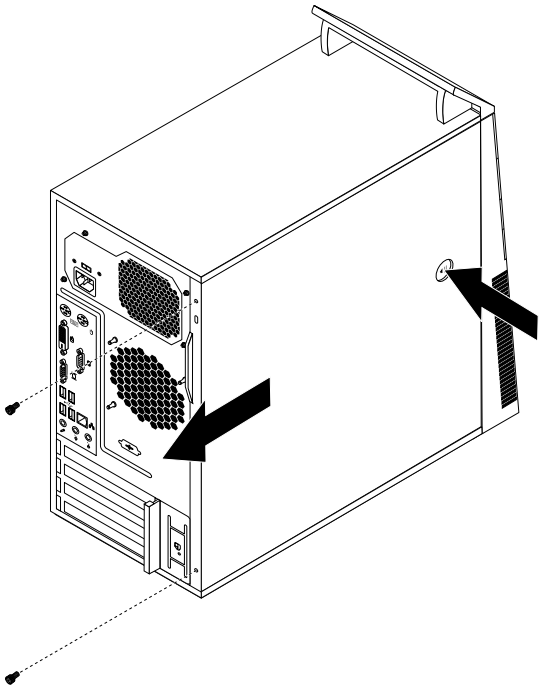


Figure 3. Removing the computer cover

Locating components

Figure 4 “Component locations” on page 70 shows the locations of the various components in your computer. To remove the computer cover, see “Removing the computer cover” on page 68.

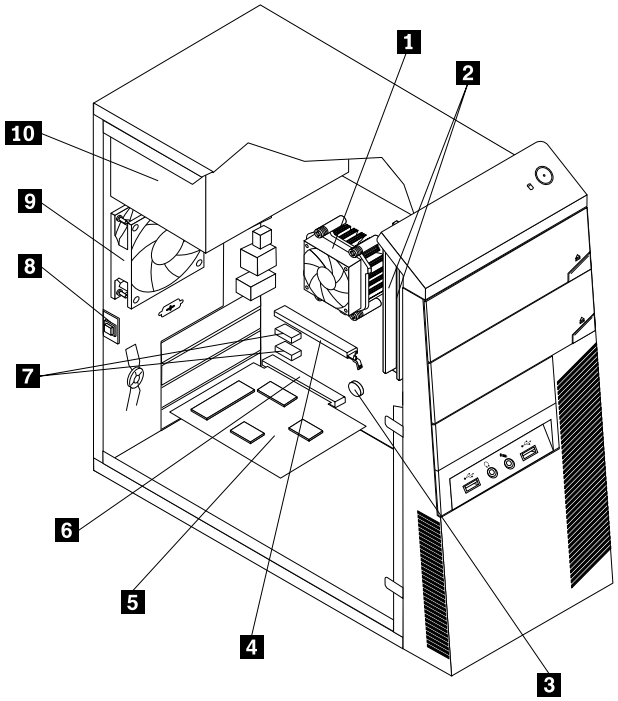


Figure 4. Component locations

1 Heat sink and fan assembly	6 PCI card slot
2 Memory modules	7 PCI Express x1 card slots
3 Battery	8 Cover presence switch(Intrusion switch) (some models)
4 PCI Express x16 graphics card slot	9 Rear fan assembly
5 PCI card	10 Power supply assembly

Locating parts on the system board

Figure 5 “System board part locations” on page 71 shows the locations of the parts on the system board.

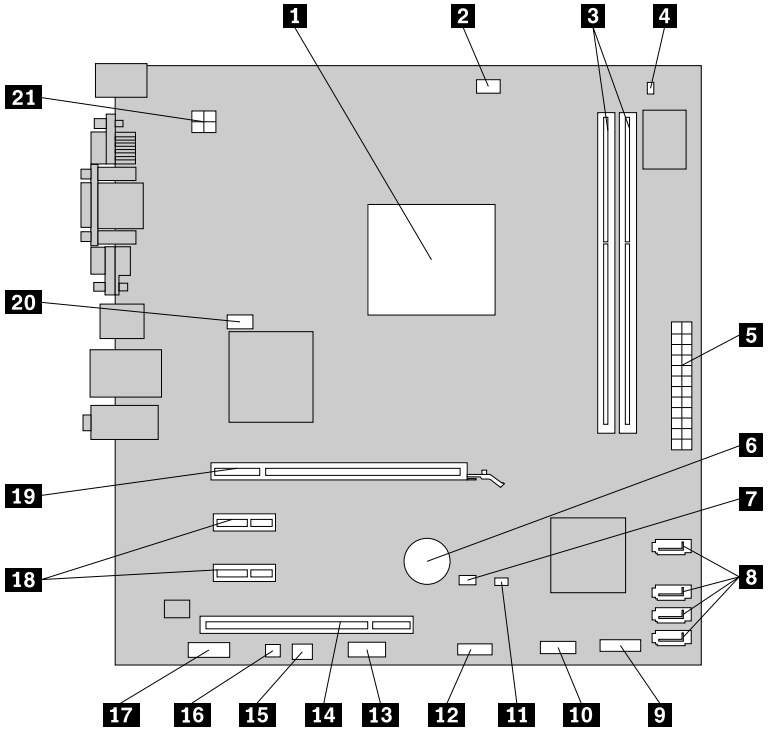


Figure 5. System board part locations

1 Microprocessor

2 Microprocessor fan connector

3 Memory slots (2)

4 Thermal sensor connector

5 24-pin power connector

6 Battery

7 Clear CMOS (Complementary Metal Oxide Semiconductor)/Recovery jumper

8 SATA connectors (4)

9 Front panel connector

10 Front USB connector

11 Cover presence switch connector(also called intrusion switch connector)

12 Front USB connector

13 Serial (COM 2) connector

14 PCI card slot

15 Power fan connector

16 Internal speaker connector

17 Front audio connector

18 PCI Express x1 card slots (2)

19 PCI Express x16 graphics card slot

20 System fan connector

21 4-pin power connector

Removing and reinstalling the front bezel

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove and reinstall the front bezel.

To remove and reinstall the front bezel, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Release the three plastic tabs on the left side of the front bezel and pivot the front bezel outward to remove it.

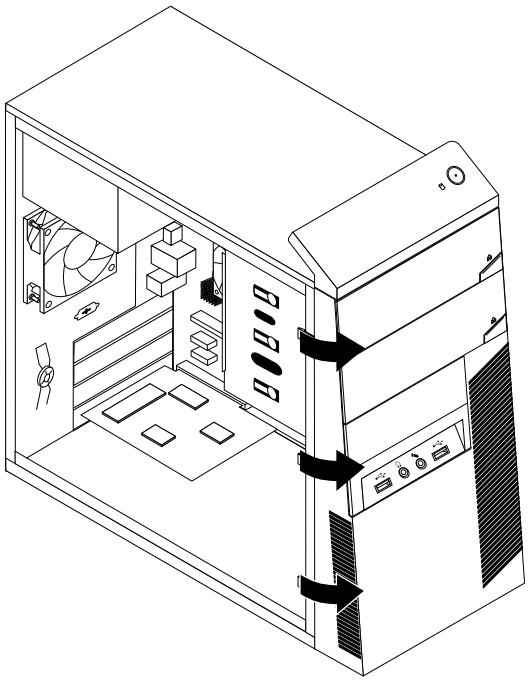


Figure 6. Removing the front bezel

3. To reinstall the front bezel, align the plastic tabs on the right side of the front bezel with the corresponding holes in the chassis, then pivot the front bezel inward until it snaps into position on the left side.
4. To complete the installation, go to “Completing the FRU replacement” on page 97.

Installing or replacing a memory module

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to install or replace a memory module.

Your computer has two slots for installing or replacing DDR3 DIMMs that provide up to a maximum of 4 GB system memory. When installing or replacing a memory module, use 1 GB or 2 GB DDR3 DIMMs in any combination up to a maximum of 4 GB.

To install or replace a memory module, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Remove any parts that might prevent your access to the memory slots.

3. Locate the memory slots. See “Locating parts on the system board” on page 70.
4. Open the retaining clips.

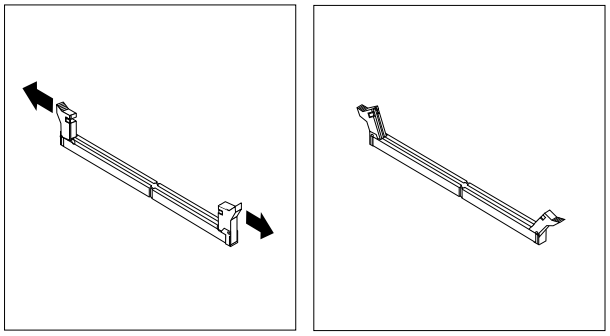


Figure 7. Opening the retaining clips

If you are replacing an old memory module, open the retaining clips and remove the memory module being replaced as shown.

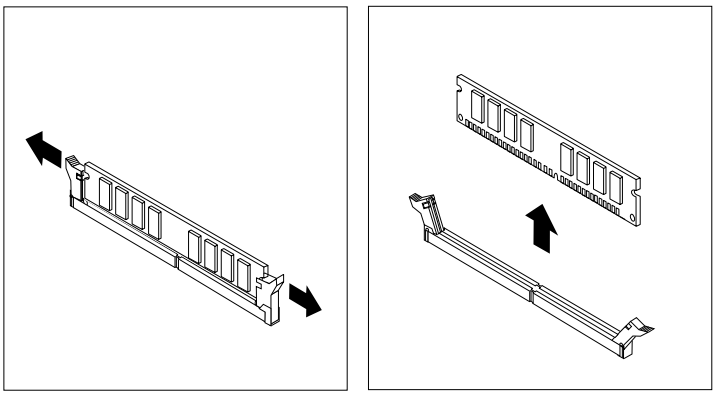


Figure 8. Removing the memory module

5. Position the memory module over the memory slot. Make sure that the notch **1** on the memory module aligns correctly with the slot key **2** on the system board. Push the memory module straight down into the slot until the retaining clips close.

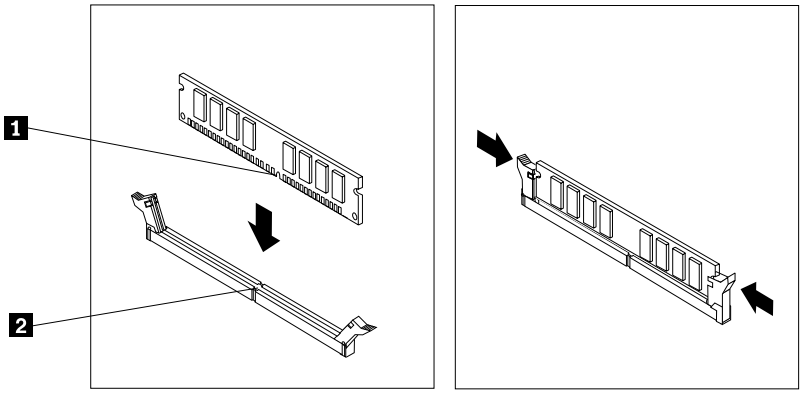


Figure 9. Installing the memory module

6. To complete the installation, go to “Completing the FRU replacement” on page 97.

Installing or replacing a PCI card

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to install or replace a PCI card.

Your computer has one standard PCI card slot, two PCI Express x1 card slots, and one PCI Express x16 graphics card slot.

To install or replace a PCI card, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. At the rear of the computer, press the release button **1** to open the card latch **2** and remove the card slot cover.

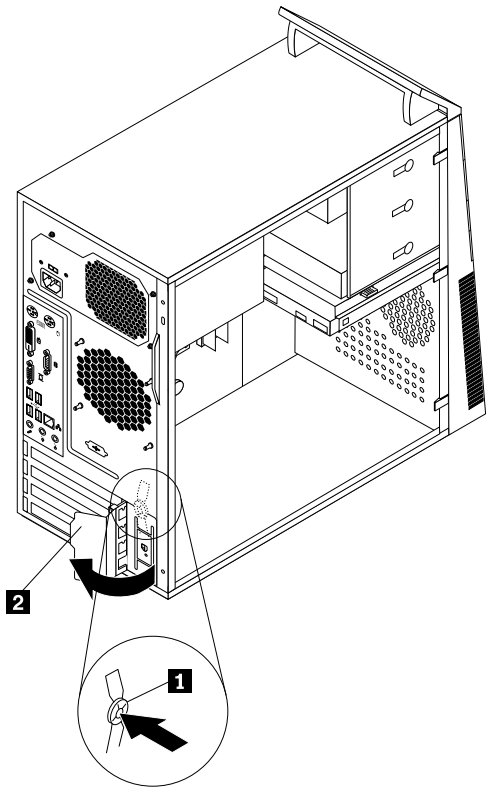


Figure 10. Opening the card latch

3. Remove the new PCI card from its static-protective package.

4. Install the new card into the appropriate card slot on the system board. See “Locating parts on the system board” on page 70. If you are replacing a PCI card, remove the old card currently installed before installing the new one.

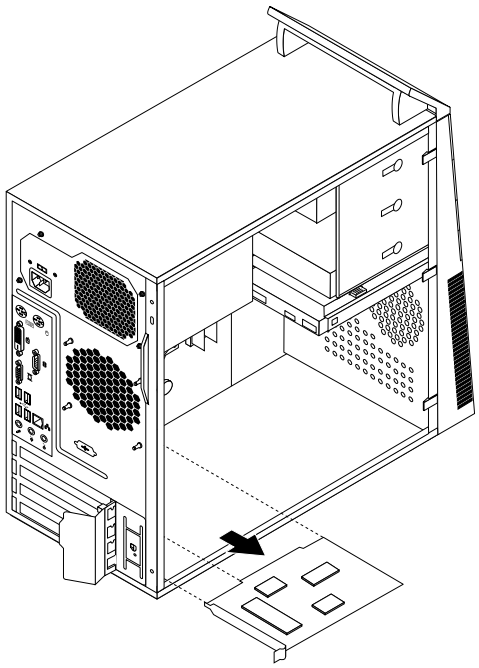
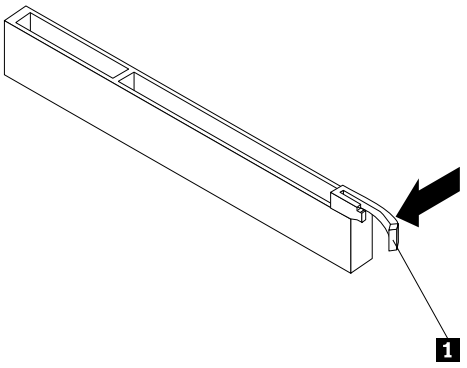


Figure 11. Removing the old card

Notes:

a. The card fits tightly into the card slot. If necessary, alternately move each side of the card a small amount until it is fully removed from the card slot.

b. If the card is held in place by a retaining latch, press the card retaining latch **1** downwards to disengage the latch. Grasp the card and gently pull it out of the slot.



5. Pivot the card latch to the closed position to secure the cards.

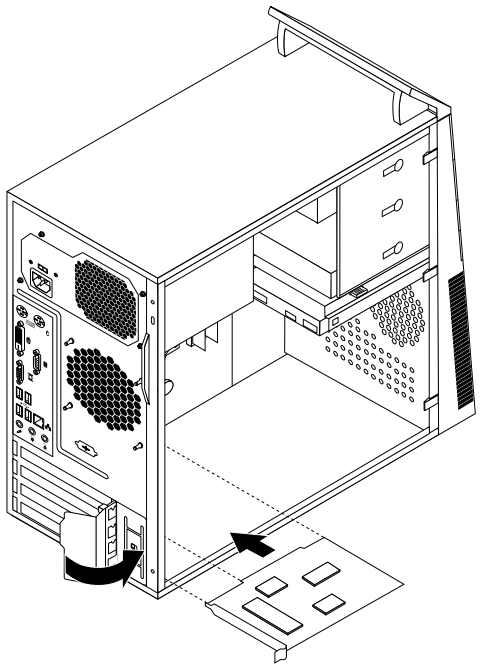


Figure 12. Closing the card latch

6. To complete the installation, go to “Completing the FRU replacement” on page 97.

Replacing the battery

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

Your computer has a special type of memory that maintains the date, time, and settings for built-in features, such as parallel-port assignments (configuration). A battery keeps this information active when you turn off the computer.

The battery normally requires no charging or maintenance throughout its life; however, no battery lasts forever. If the battery fails, the date, time, and configuration information (including passwords) are lost. An error message is displayed when you turn on the computer.

Refer to the “Lithium battery notice” in the *ThinkCentre Safety and Warranty Guide* for information about replacing and disposing of the battery.

To replace the battery, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Locate the battery. See “Locating parts on the system board” on page 70.
3. Remove the old battery.

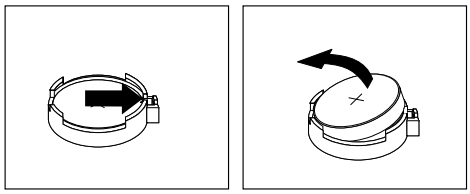


Figure 13. Removing the old battery

4. Install a new battery.

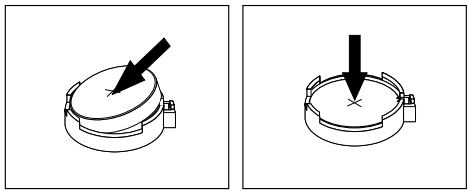


Figure 14. Installing a new battery

5. Reinstall the computer cover and connect the cables. See “Completing the FRU replacement” on page 97.

   Note: When the computer is turned on for the first time after replacing the battery, an error message might be displayed. This is normal after replacing the battery.
6. Turn on the computer and all attached devices.
7. Use the Setup Utility program to set the date, time, and any passwords. See Chapter 6 “Using the Setup Utility program” on page 39.

Replacing the power supply assembly

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the power supply assembly.

To replace the power supply assembly, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Disconnect the power supply assembly cables from the system board and all drives. See “Locating parts on the system board” on page 70.
3. Lay the computer on its side and remove the four screws at the rear of the chassis that secure the power supply assembly.

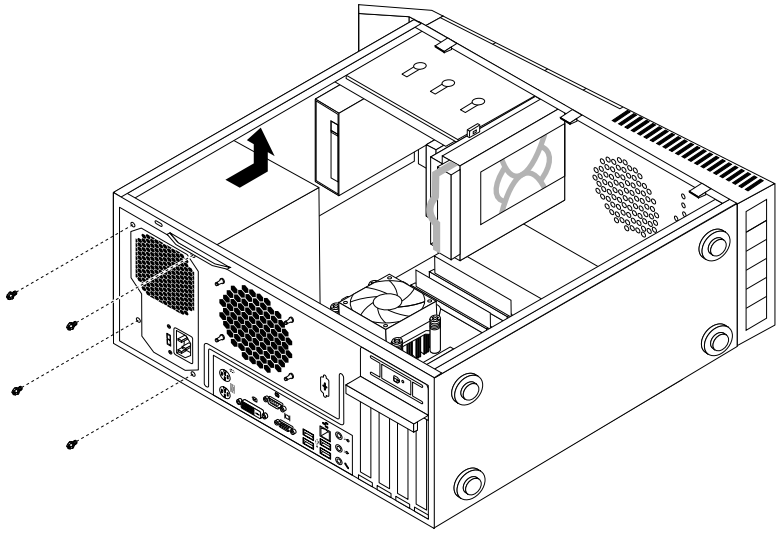


Figure 15. Removing the screws that secure the power supply assembly

4. Remove the old power supply assembly from the chassis.
5. Ensure that the power supply assembly is the correct replacement. Some power supply assemblies automatically sense the voltage, some power supply assemblies are voltage specific, and some power supply assemblies have a voltage-selection switch. If your computer has a voltage-selection switch, ensure that you set the voltage-selection switch of the new power supply assembly to match the voltage available at your electrical outlet. If necessary, use a ballpoint pen to slide the voltage-selection switch to a different position.
   - If the voltage supply range in your local country or region is 100-127 V ac, set the voltage-selection switch to 115 V.
   - If the voltage supply range in your local country or region is 200-240 V ac, set the voltage-selection switch to 230 V.
6. Install the new power supply assembly into the chassis so that the screw holes in the power supply assembly align with those in the chassis.
7. Install the four screws to secure the power supply assembly.

   Note: Use only screws provided by Lenovo.
8. Reconnect the power supply assembly connectors to the system board.
9. Reconnect a power supply assembly connector to each of the drives.
10. Go to “Completing the FRU replacement” on page 97.

Replacing the heat sink and fan assembly

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the heat sink and fan assembly.

CAUTION:

The heat sink and fan assembly might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the heat sink and fan assembly, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Lay the computer on its side for easier access to the system board.
3. Locate the heat sink and fan assembly. See “Locating parts on the system board” on page 70.
4. Disconnect the heat sink and fan assembly cable from the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 70.
5. Remove the four screws **1** that secure the heat sink and fan assembly to the system board.

   Note: Carefully remove the four screws from the system board to avoid any possible damage. The four screws cannot be removed from the heat sink and fan assembly.

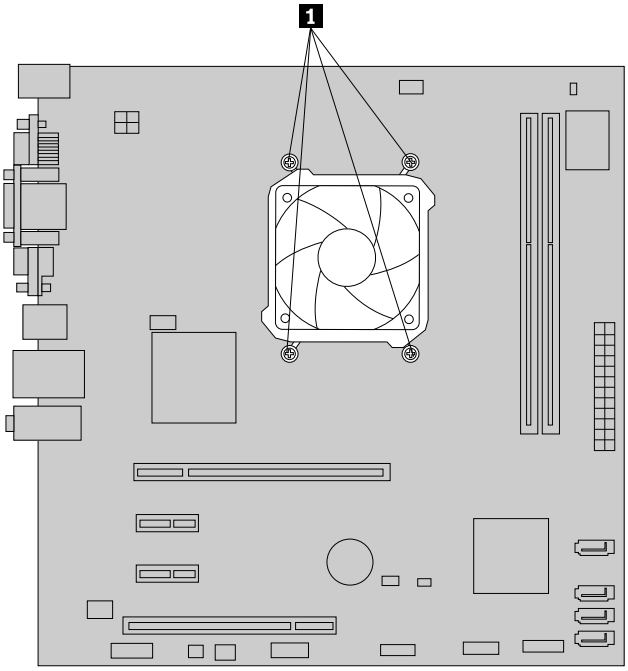


Figure 16. Removing the heat sink and fan assembly

6. Lift the failing heat sink and fan assembly off the system board.

   Notes:

   a. You might have to gently twist the heat sink and fan assembly to free it from the microprocessor.

   b. Do not touch the thermal grease while handling the heat sink and fan assembly.

7. Position the new heat sink and fan assembly on the system board so that the four screws are aligned with the holes on the system board.

   Note: Position the new heat sink and fan assembly so that the heat sink and fan assembly cable is toward the microprocessor fan connector on the system board.

8. Alternate tightening each screw a small and equal amount until the heat sink and fan assembly is secured to the system board. Do not over-tighten the screws.
9. Connect the new heat sink and fan assembly cable to the microprocessor fan connector on the system board.
10. Go to “Completing the FRU replacement” on page 97.

Replacing the microprocessor

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

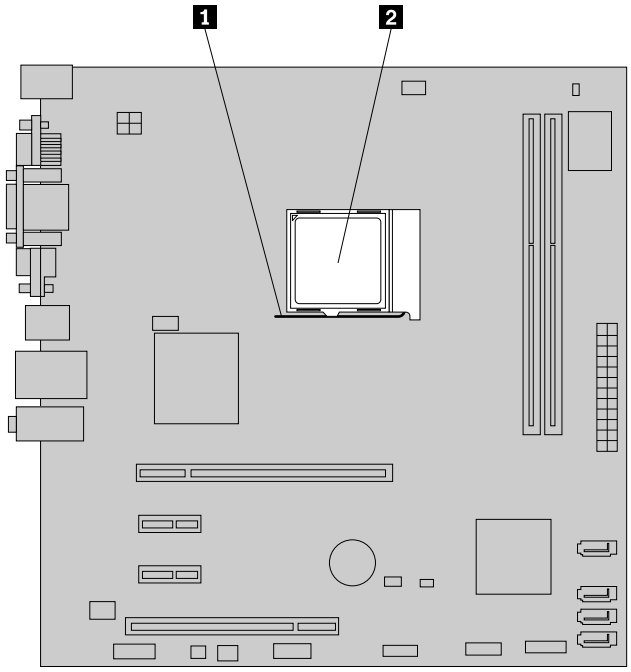
This section provides instructions on how to replace the microprocessor.

CAUTION:

The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the microprocessor, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Lay the computer on its side for easier access to the system board.
3. Note the locations of all parts and connectors on the system board. See “Locating parts on the system board” on page 70.
4. Remove any parts or cables that might prevent your access to the system board.
5. Remove the heat sink and fan assembly. See “Replacing the heat sink and fan assembly” on page 78.
6. Place the heat sink and fan assembly on its side so that the thermal grease does not come in contact with anything.
7. Lift the small handle **1** to release the microprocessor **2** secured on the system board.

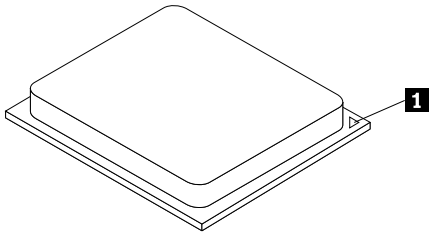


8. Lift the microprocessor straight up and out of the socket.

Notes:

a. Your microprocessor and socket might look different from the one illustrated.

b. Note the orientation of the microprocessor in the socket. You can look for the small triangle 1 on one corner of the microprocessor. This is important when installing the new microprocessor on the system board.



c. Touch only the sides of the microprocessor. Do not touch the gold contacts on the bottom.

d. Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

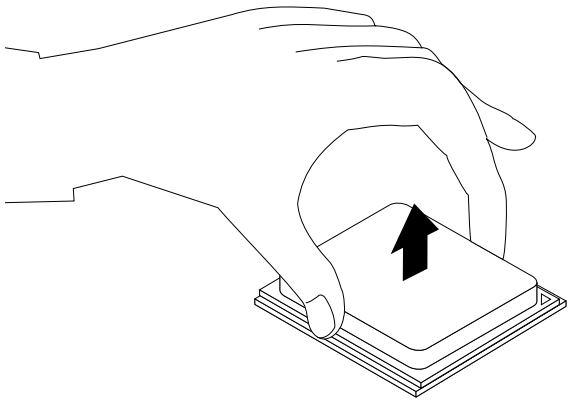


Figure 17. Removing the microprocessor

9. Make sure that the small handle is in the raised position.
10. Remove the protective cover that protects the gold contacts on the new microprocessor.
11. Hold the new microprocessor and align the small triangle on one corner of the new microprocessor with the corresponding small triangle on one corner of the microprocessor socket.
12. Lower the new microprocessor straight down into the microprocessor socket on the system board.
13. Lower the small handle to secure the new microprocessor in the socket.
14. Reinstall the heat sink and fan assembly. See “Replacing the heat sink and fan assembly” on page 78.
15. Reinstall any other parts or reconnect any other cables you removed.
16. Go to “Completing the FRU replacement” on page 97.

Replacing the system board

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the system board.

CAUTION:

The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

Note: When replacing the system board, you must order a new retention module for the new system board. Make sure you have a retention module for the new system board before continuing this procedure.

To replace the system board, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Remove the primary hard disk drive with the hard disk drive cage. See “Replacing the primary hard disk drive” on page 83.
3. Lay the computer on its side to make the system board more accessible.
4. Remove all memory modules and PCI cards that are currently installed. See “Installing or replacing a memory module” on page 72 and “Installing or replacing a PCI card” on page 74.
5. Carefully take note of the location of all cable connectors on the system board and disconnect all the cables. See “Locating parts on the system board” on page 70.
6. Remove the heat sink and fan assembly from the failing system board. See “Replacing the heat sink and fan assembly” on page 78.
7. Remove the screws that secure the system board to the chassis.
8. Carefully remove the system board out of the chassis.
9. Remove the microprocessor from the failing system board and install it on the new system board. See “Replacing the microprocessor” on page 80.
10. Install the new retention module on the new system board.

11. Install the heat sink and fan assembly and connect the heat sink and fan assembly cable to the microprocessor fan connector on the new system board. See “Replacing the heat sink and fan assembly” on page 78.
12. Install the new system board into the chassis and align the screw holes with those in the chassis. Insert and tighten the screws to secure the new system board in place.
13. Install all memory modules and PCI cards removed from the failing system board on the new system board.
14. Reinstall the primary hard disk drive with the hard disk drive cage.
15. Reconnect all remaining cables to the system board. See “Locating parts on the system board” on page 70.
16. To complete the replacement, go to “Completing the FRU replacement” on page 97.

Replacing the primary hard disk drive

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the primary hard disk drive.

To replace the primary hard disk drive, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Locate the primary hard disk drive.
3. Disconnect the signal cable and the power cable from the hard disk drive.
4. Press the blue release tab **1** down, slide the hard disk drive cage **2** back, and pivot it outward.

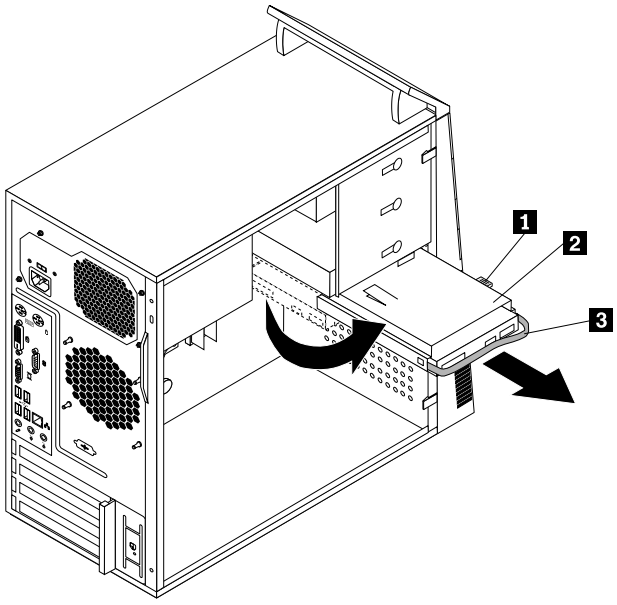


Figure 18. Removing the primary hard disk drive

5. Remove the hard disk drive cage from the chassis by simply sliding it outward.
6. Pull on the blue handle 3 to release and remove the hard disk drive from the drive cage.
7. Remove the hard disk drive from the blue bracket by flexing the sides of the bracket enough to slide it free from the hard disk drive.
8. To install a new hard disk drive into the blue bracket, flex the bracket and align pin 1, pin 2, pin 3, and pin 4 on the bracket with the holes in the hard disk drive. Do not touch the circuit board 5 on the bottom of the hard disk drive.

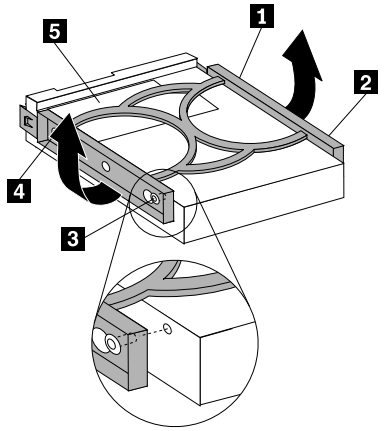


Figure 19. Installing the primary hard disk drive into the bracket

9. Slide the new hard disk drive into the drive cage until it snaps into position.
10. Align the drive cage pivot pin with the slot 1 in the upper drive cage and slide the hard disk drive cage into the chassis.
11. Connect the signal cable and the power cable to the rear of the new hard disk drive.
12. Press down on the metal latch 2 and pivot the drive cage into place, and then slide it forward until it snaps into position.

    Note: There are two arrows, one on the upper drive cage and one on the hard disk drive cage. The arrows are aligned when the hard disk drive is in the proper position.

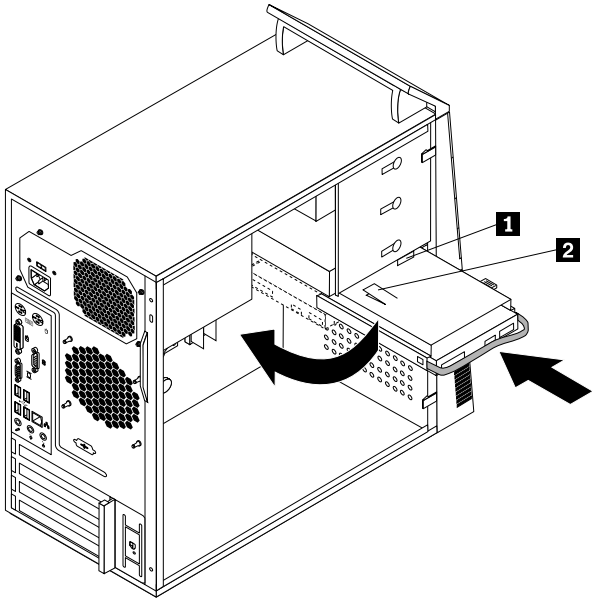


Figure 20. Installing the primary hard disk drive with the hard disk drive cage

13. Go to “Completing the FRU replacement” on page 97.

Replacing the secondary hard disk drive

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

Note: Depending on your model type, your computer might come with a secondary hard disk drive bay for installing or replacing a secondary hard disk drive.

This section provides instructions on how to replace the secondary hard disk drive.

To replace the secondary hard disk drive, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Locate the secondary hard disk drive.
3. Disconnect the signal cable and the power cable from the hard disk drive.
4. Press the blue release button to release the hard disk drive cage from the chassis.

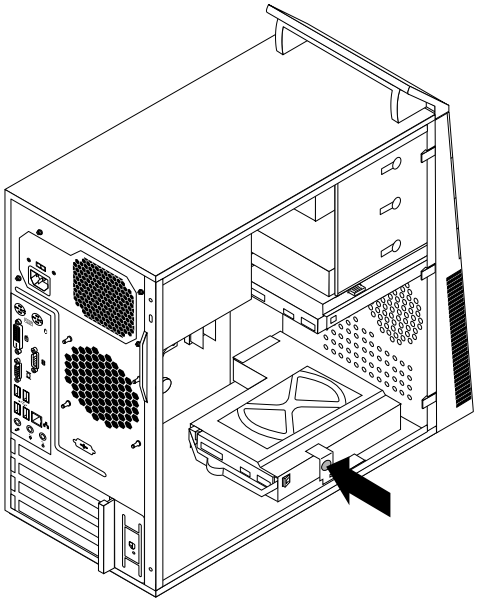


Figure 21. Removing the secondary hard disk drive

5. Remove the hard disk drive cage from the chassis by simply sliding it outward.
6. Pull on the blue handle to release and remove the hard disk drive from the hard disk drive cage.
7. Remove the hard disk drive from the blue plastic bracket by flexing the sides of the bracket enough to slide it free from the hard disk drive.
8. To install a new hard disk drive into the blue bracket, flex the bracket and align pin 1, pin 2, pin 3, and pin 4 on the bracket with the holes in the hard disk drive. Do not touch the circuit board 5 on the bottom of the hard disk drive.

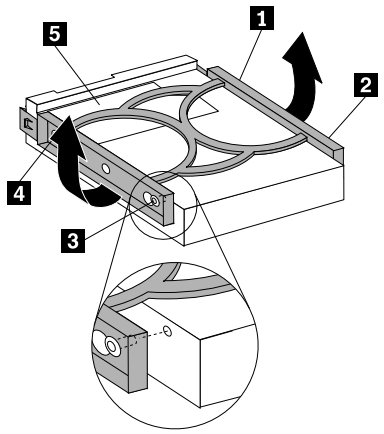


Figure 22. Installing the secondary hard disk drive into the bracket

9. Slide the new hard disk drive into the hard disk drive cage until it snaps into position.
10. Install the hard disk drive cage into the chassis until it snaps into position underneath the metal tab. Make sure that the hard disk drive cage is secured in the chassis.

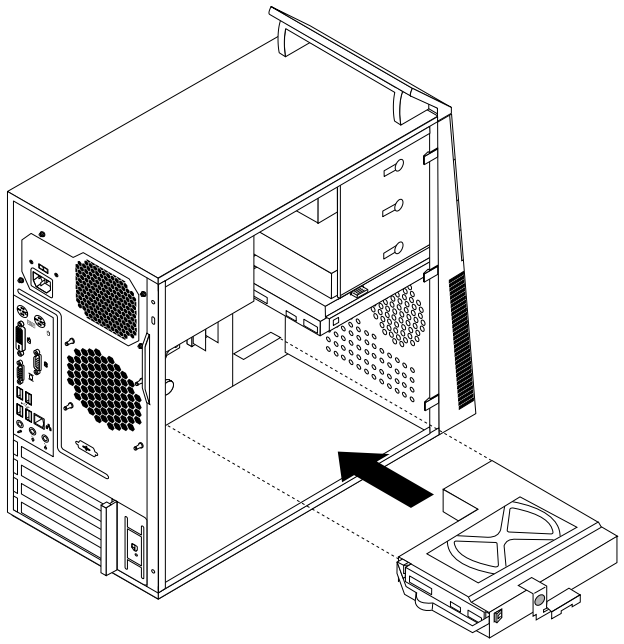


Figure 23. Installing the secondary hard disk drive and drive cage

11. Connect the signal and power cables to the rear of the new hard disk drive.
12. Go to “Completing the FRU replacement” on page 97.

Replacing the optical drive

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the optical drive.

To replace the optical drive, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 68.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 71.
4. Disconnect the signal cable and the power cable from the rear of the optical drive.
5. Press the blue release button **1** and slide the optical drive out of the optical drive bay.

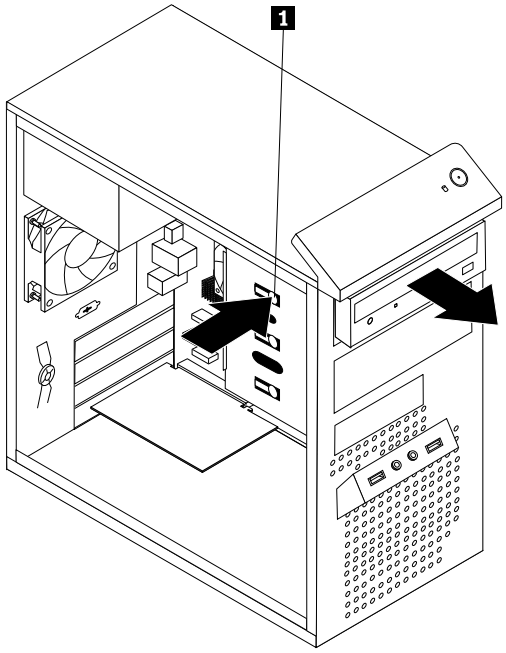


Figure 24. Removing the optical drive

6. Install the optical drive retainer **1** on the side of the new optical drive. Then, slide the new optical drive into the optical drive bay from the front until it snaps into position.

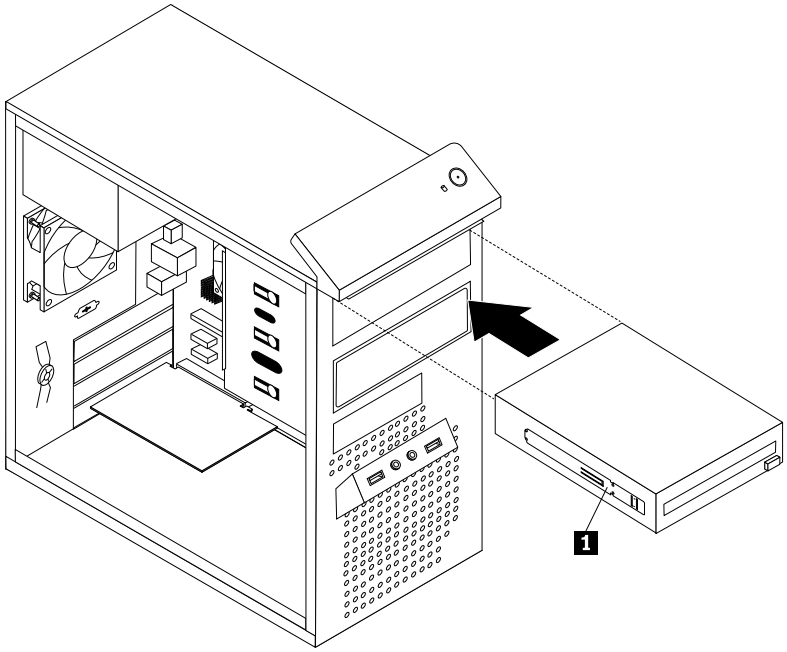


Figure 25. Installing the optical drive

7. Connect the signal cable and the power cable to the rear of the new optical drive. See “Connecting a SATA drive” on page 89.

8. Reinstall the front bezel. See “Removing and reinstalling the front bezel” on page 71.
9. To complete the replacement, go to “Completing the FRU replacement” on page 97.

Connecting a SATA drive

You can connect a SATA optical drive or a SATA hard disk drive to an available SATA connector on the system board.

To connect a SATA drive, do the following:

1. Connect one end of the signal cable to the SATA drive and the other end to an available SATA connector on the system board. See “Locating parts on the system board” on page 70.
2. Locate an available five-wire power connector and connect it to the SATA drive.

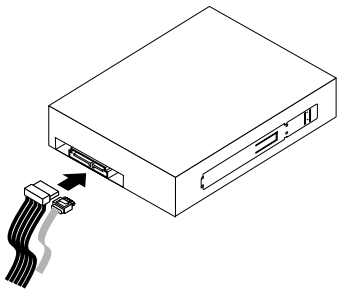


Figure 26. Connecting a SATA optical drive

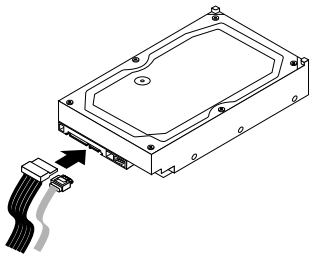


Figure 27. Connecting a SATA hard disk drive

Replacing the card reader

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

Depending on your model type, your computer might have a card reader installed. This section provides instructions on how to replace the card reader.

To replace the card reader, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 71.

3. Disconnect the signal cable and the power cable from the rear of the card reader.
4. Press the release button and slide the card reader out of the front of the computer.

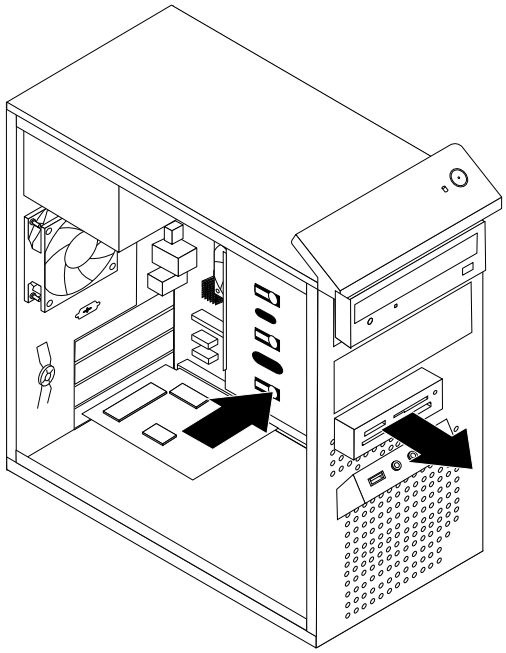


Figure 28. Removing the card reader

5. Remove the retaining bracket from the failing card reader and install it on a new card reader.

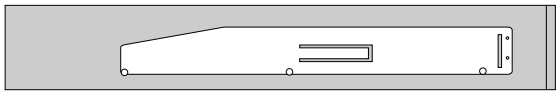


Figure 29. Retaining bracket for the card reader

6. Slide the new card reader into the drive bay until it snaps into position.
7. Connect the signal cable and the power cable to the new card reader.
8. Reinstall the front bezel.
9. Go to “Completing the FRU replacement” on page 97.

Replacing the front fan assembly

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the front fan assembly.

Note: Depending on model type, your computer might have a front fan assembly installed.

To replace the front fan assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 68.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 71.
4. Disconnect the front fan assembly cable from the power fan connector on the system board. See “Locating parts on the system board” on page 70.
5. Release the two tabs **1** that attach the front fan assembly to the chassis as shown and then completely remove the front fan from the chassis.

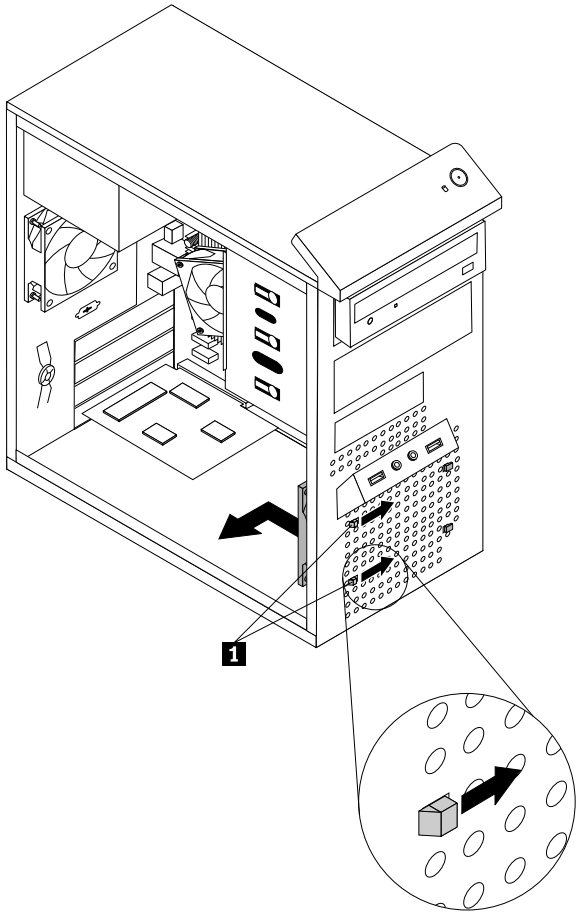


Figure 30. Removing the front fan assembly

6. Insert the two tabs **2** of the new front fan assembly into the corresponding holes in the chassis, and press the other two tabs **1** through the holes until the front fan assembly is secured in place.

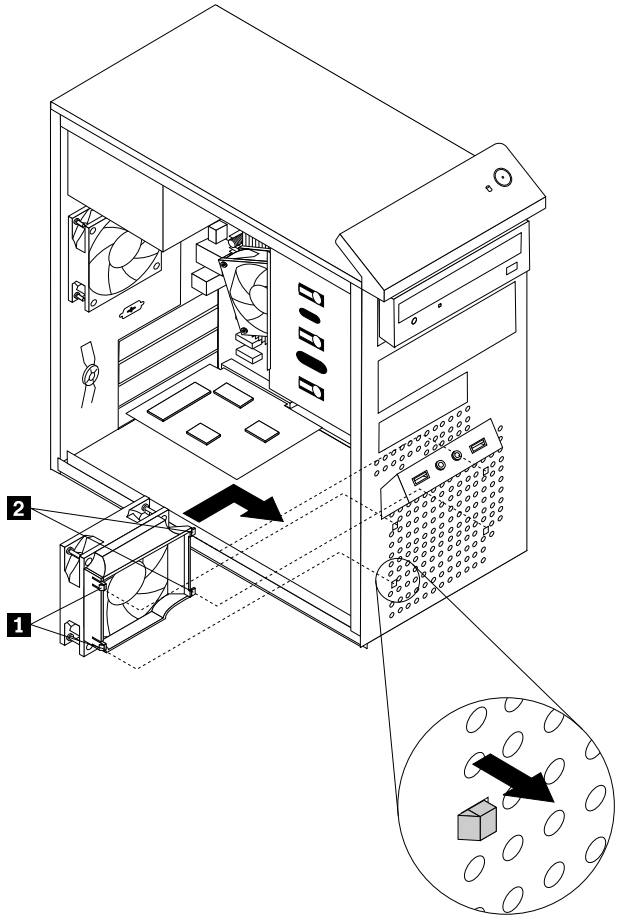


Figure 31. Installing the front fan assembly

7. Connect the front fan assembly cable to the power fan connector on the system board.

Replacing the rear fan assembly

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the rear fan assembly.

To replace the rear fan assembly, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Locate the rear fan assembly. See “Locating components” on page 69.
3. Disconnect the rear fan assembly cable from the system fan connector on the system board. See “Locating parts on the system board” on page 70.
4. The rear fan assembly is attached to the chassis by four rubber mounts. Remove the rear fan assembly by breaking or cutting the rubber mounts and gently pulling the rear fan assembly out of the chassis.

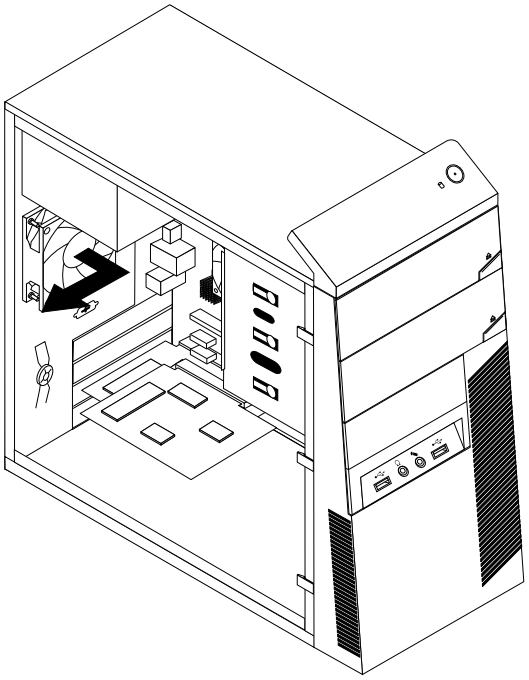


Figure 32. Removing the rear fan assembly

5. Install the new rear fan assembly by aligning the new rubber mounts of the new rear fan assembly with the holes on the chassis and push the rubber mounts through the holes.

   Note: The new rear fan assembly you received will have four new rubber mounts attached.

6. Pull on the tips of the rubber mounts until the rear fan assembly is in place.

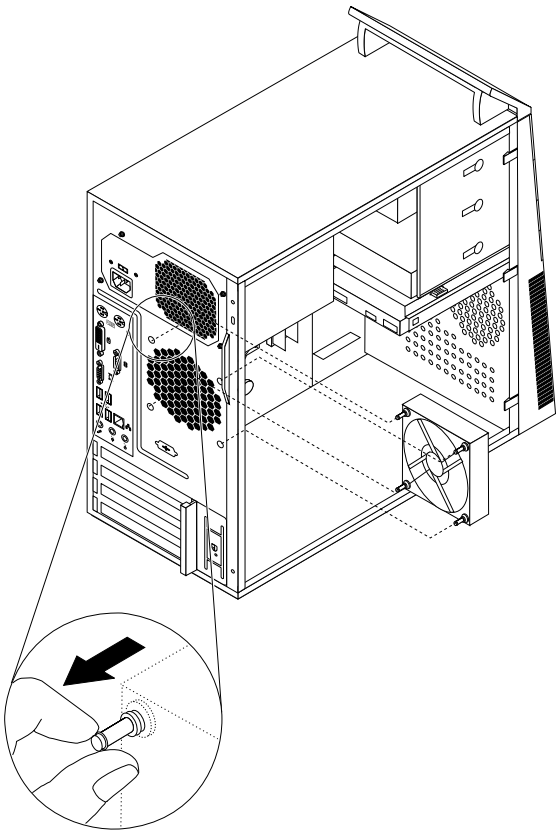


Figure 33. Installing the rear fan assembly

7. Connect the rear fan assembly cable to the system fan connector on the system board.
8. Go to “Completing the FRU replacement” on page 97.

Replacing the internal speaker

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the internal speaker.

To replace the internal speaker, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Locate the internal speaker connector on the system board. See “Locating parts on the system board” on page 70.
3. Disconnect the internal speaker cable from the system board.
4. Push the metal tab on the top of the internal speaker outward and slide the internal speaker upward to completely remove it from the chassis.

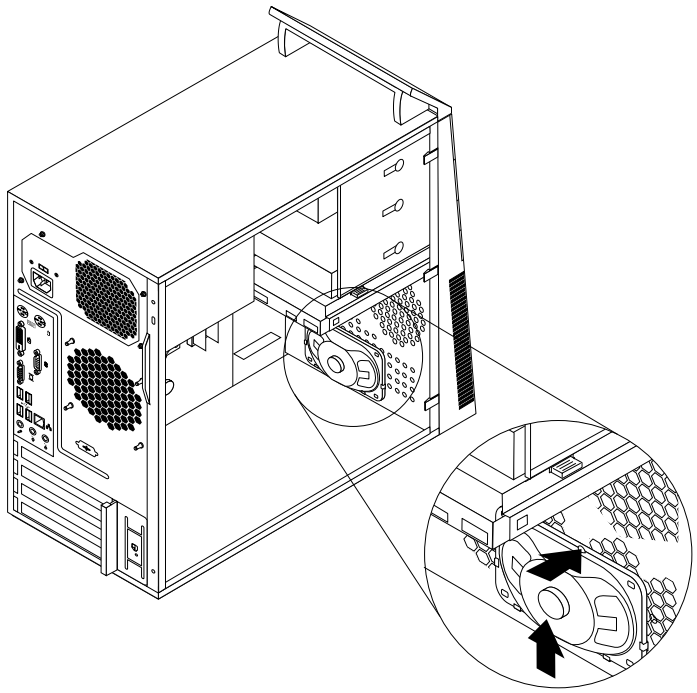


Figure 34. Removing the old internal speaker

5. Position a new internal speaker into the metal clips and push downward on the internal speaker until it snaps into position.

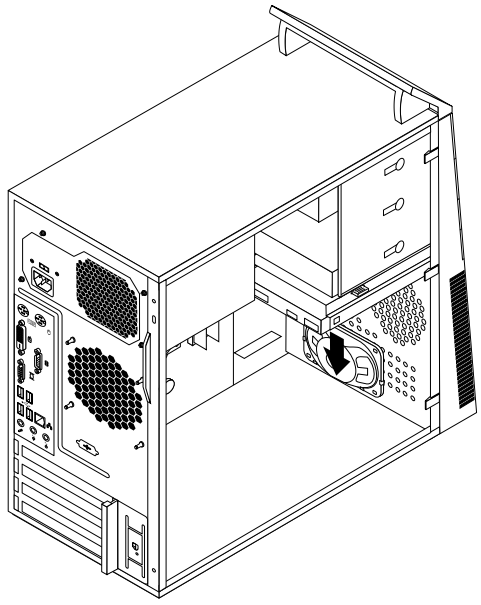


Figure 35. Installing a new internal speaker

6. Connect the speaker cable to the system board. See “Locating parts on the system board” on page 70.
7. To complete the replacement, go to “Completing the FRU replacement” on page 97.

Replacing the front audio and USB assembly

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the front audio and USB assembly.

To replace the front audio and USB assembly, do the following:

1. Remove the computer cover. See “Removing the computer cover” on page 68.
2. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 71.
3. Disconnect the front audio and USB assembly cables from the system board. See “Locating parts on the system board” on page 70.
4. Note the front audio and USB assembly cables routing and remove the screw that secures the front audio and USB assembly to the chassis.

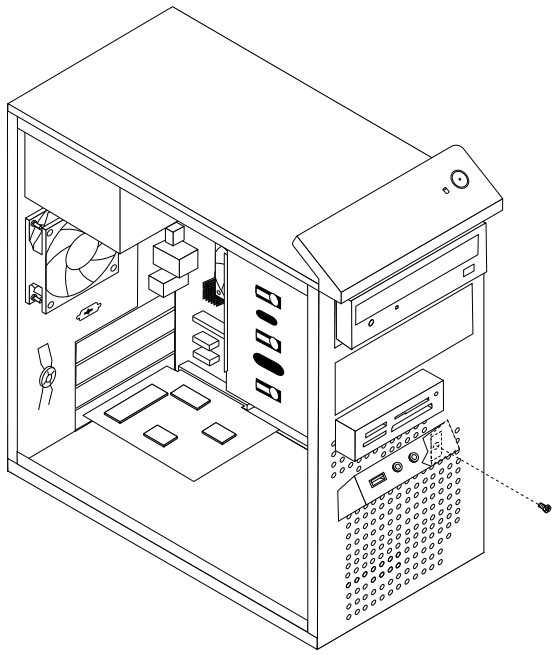


Figure 36. Removing the front audio and USB assembly

5. Remove the front audio and USB assembly.
6. Route the cables for the new front audio and USB assembly through the hole in the chassis to the system board.
7. Install the new front audio and USB assembly into the chassis and secure it with the screw.
8. Connect the new front audio and USB assembly cables to the system board. See “Locating parts on the system board” on page 70.
9. Reinstall the front bezel.
10. To complete the replacement, go to “Completing the FRU replacement” on page 97.

Completing the FRU replacement

This section provides instructions on how to complete the FRU replacement.

After replacing the FRUs, you need to reinstall any removed parts, reconnect and route any internal cables, reinstall the computer cover, and reconnect any external cables, such as power cords. Depending on the FRUs replaced, you might need to confirm the updated information in the Setup Utility program, see Chapter 6 “Using the Setup Utility program” on page 39.

Note: When the power cord is first plugged in, the computer might appear to turn on for a few seconds and then turn off. This is a normal sequence to enable the computer to initialize.

To reinstall the computer cover and reconnect cables to your computer:

1. Ensure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer. See “Locating components” on page 69 for the location of the various components.
2. Reconnect any internal cables.
3. Position the computer cover on the chassis so that the rail guides on the bottom of the computer cover engage the rails. Then, push the computer cover closed until it snaps into position.

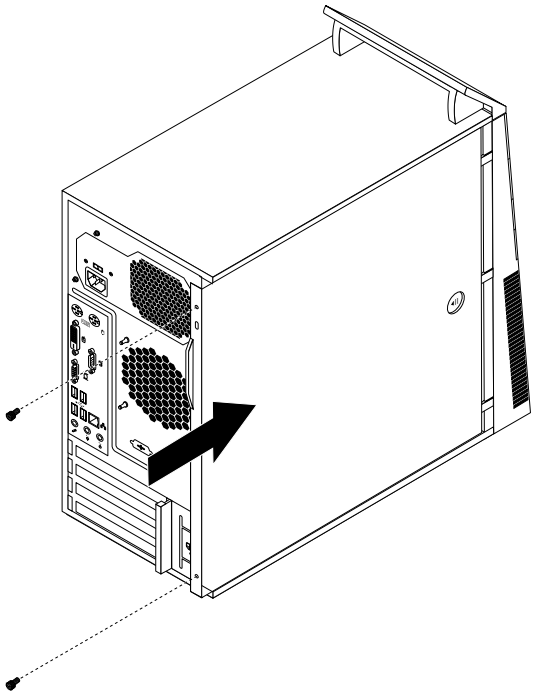


Figure 37. Reinstalling the computer cover

4. If the computer cover is secured with thumbscrews, install them.
5. If a cover lock is installed, lock the cover.
6. Reconnect the external cables and power cords to the computer. See “Locating connectors on the rear of your computer” on page 67.
7. If you have replaced the system board, you must update (flash) the BIOS. See “Updating (flashing) BIOS from a disc” on page 203.

8. Some FRU replacements require the configuration to be updated. To update your configuration, see Chapter 6 “Using the Setup Utility program” on page 39.

Chapter 9. FRU lists

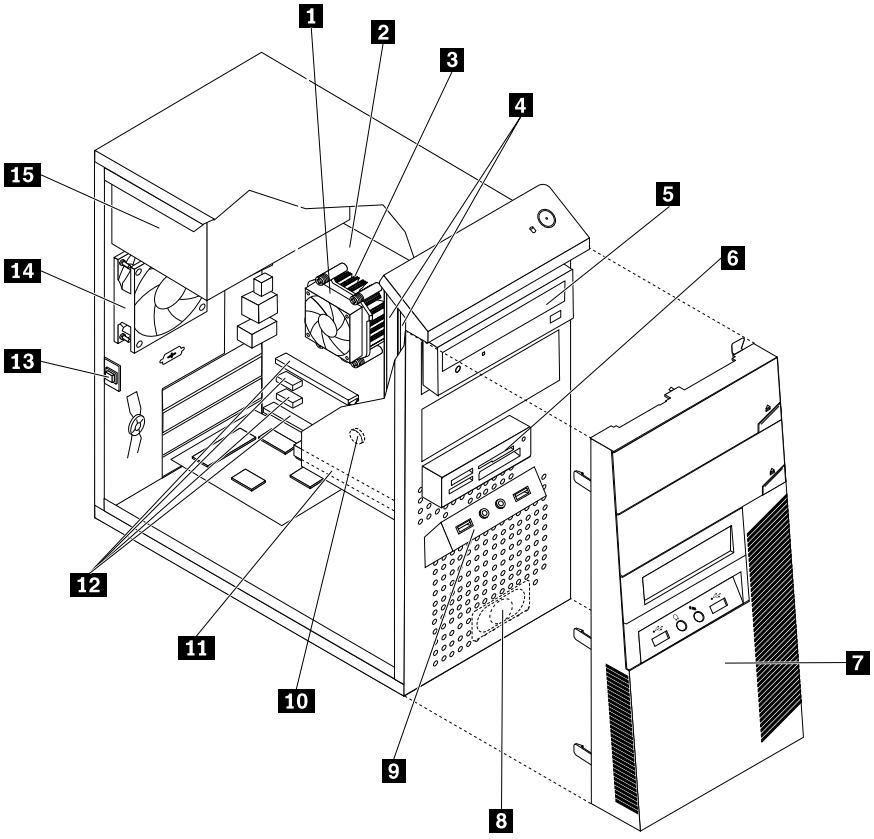
This chapter lists the information about the FRUs for the computers.

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Note: In the following tables, a customer replaceable unit (CRU) is identified as "1", "2", or "N" in the **CRU** column. "N" means that the part is not a CRU, "1" means that the part is a Self-service CRU, and "2" means that the part is an Optional-service CRU.

Overall: MT 3317, 4013, 4478, 5043, 5237, 5393, 5526, and 6674

The following replaceable components are available for the 3317, 4013, 4478, 5043, 5237, 5393, 5526, and 6674 machine type models.



Item #	FRUs	FRU #	CRU
1	AMD 89W 4 pin cooler kit Tamdhu (no fan grill) • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9886	2

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Item #	FRUs	FRU #	CRU
1	AMD AM2/AM3 65W cooler kit (no fan grill) • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9711	2
2	System board, planar RS760V non-AMT mATX GA • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	64Y7161	N
2	System board, planar AMD RS760 mATX GA - optional (only for Brazil) • MT 3317: A1P A2P • MT 4013: • MT 5043: A1P A3P A4P A5P • MT 5237: • MT 5393: • MT 6674:	71Y3278	N
2	System board, planar AMD RS760 mATX GA • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	89Y1256	N

Item #	FRUs	FRU #	CRU
3	Microprocessor, Athlon II X2 B22 2.80GHz 2M • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5429	N
3	Microprocessor, Athlon II X2 B24 3.00GHz, 2M • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5431	N
3	Microprocessor, Athlon II X2 215 (2.7GHz, 1M Total Cache, AM3, 65W) C2 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y6937	
3	Microprocessor, Athlon II X2 240 2.80GHz 2M • MT 3317: 91Z • MT 4013: B2U B2F B2S B3U B3F B4U B4F • MT 5043: A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y AFU AFF AFS • MT 5237: AAU AAF AAS • MT 5393: A2G A4G • MT 6674: A6U A6F A6S A6D A6Y A3U A3F A3S A3D A3Y AJQ AQQ ANU ANF ANS AND ANY BDQ BFQ	64Y8012	N
3	Microprocessor, Athlon II X2 245 2.90GHz 2M • MT 3317: A1P • MT 4013: A3T A4A A5A A9T • MT 5043: A5U A5F A5S A5D A5Y A7V ACB ADB • MT 5237: A3T A4A A9A ABA • MT 5393: • MT 6674: A8U A8F A9A A9Q AAV AFU AFF AFS AFY AFA ALT ALB ASU ASF ASS ATA AUA BEQ BJQ B1V B2V B3V B4V	64Y8013	N

Item #	FRUs	FRU #	CRU
3	Microprocessor, Athlon II X2 250 3.00GHz 2M • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8014	N
3	Microprocessor, Athlon II X2 220 (2.8GHz, 1M Total Cache, AM3, 65W) C3 45nm • MT 3317: 91Z CTO • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y9193	N
3	Microprocessor, Athlon II X3 425 2.70 1.5M • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8019	N
3	Microprocessor, Athlon II X3 435 (2.90GHz, 1.5M Total Cache, AM3, 95W) Rev 45nm • MT 3317: A2P • MT 4013: A6A A8T • MT 5043: A1U A1F A1S A1D A1Y A9H A8V AGU AGF AGS AAB ABB AHB AJB • MT 5237: ADT AET • MT 5393: A3G • MT 6674: A4U A4F A4S A4D A4Y AGH AKQ APU APF APS APD APY APQ AVA AWT BGQ B5V B6V B7V B8V	64Y8020	N
3	Microprocessor, Athlon II X3 440 (3.0GHz,1.5MB Total Cache, AM3, 95W) C3 45nm • MT 3317: 91Z CTO • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y9195	

Item #	FRUs	FRU #	CRU
3	Microprocessor, Athlon II X4 620 (2.60GHz, 2M Total Cache, AM3, 95W) Rev 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8023	N
3	Microprocessor, Athlon II X4 635 (2.9GHz, 2MB Total Cache, AM3, 95W) C3 45nm • MT 3317: 91Z CTO • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y9197	
3	Microprocessor, Athlon II X4 630 (2.80GHz, 2M Total Cache, AM3, 95W) Rev 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8024	N
3	Microprocessor, Phenom II X2 545 (3.00GHz, 7M Total Cache, AM3, 80W) Rev 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8025	N
3	Microprocessor, Phenom II X2 550 (3.10GHz, 7M Total Cache, AM3, 80W) Rev 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8026	N

Item #	FRUs	FRU #	CRU
3	Microprocessor, Phenom II X3 740 (3.00GHz, 7.5M Total Cache, AM3, 95W) C2 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5437	N
3	Microprocessor, Phenom II X4 820 (2.80GHz, 6M Total Cache, AM3, 95W) C2 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5443	N
3	Microprocessor, Phenom II X4 945 (3.00GHz, 8M Total Cache, AM3, 95W) Rev 45nm • MT 3317: 91Z • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8037	N
3	Microprocessor, Sempron 140 (2.7GHz, 1M Total Cache, AM3, 45W) C2 45nm • MT 3317: • MT 4013: A7U A7F A7S A7D A7Y B1Q • MT 5043: AEU AEF AES • MT 5237: • MT 5393: A1G • MT 6674:	71Y6414	
3	Microprocessor, Sempron 145 (2.8GHz, 1M Total Cache, AM3, 45W) C3 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674: 91Z CTO	71Y9191	N

Item #	FRUs	FRU #	CRU
3	Microprocessor, Phenom II X3 B73 (2.8GHz, 7.5M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5433	N
3	Microprocessor, Phenom II X3 B75 (3.0GHz, 7.5M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5435	N
3	Microprocessor, Phenom II X3 710 (2.6GHz, 7.5M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8029	N
3	Microprocessor, Phenom II X3 720 (2.8GHz, 7.5M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8030	N
3	Microprocessor, Phenom II X4 B93 (2.8GHz, 8M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5439	N

Item #	FRUs	FRU #	CRU
3	Microprocessor, Phenom II X4 B95 (3.0GHz, 8M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y5441	N
3	Microprocessor, Phenom II X4 805 (2.5GHz, 6M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8031	N
3	Microprocessor, Phenom II X4 810 (2.6GHz, 6M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8032	N
3	Microprocessor, Phenom II X4 910 (2.6GHz, 8M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8035	N
3	Microprocessor, Phenom II X4 925 (2.8GHz, 8M Total Cache, AM3, 95W) C2 45nm • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	64Y8036	N

Item #	FRUs	FRU #	CRU
4	Memory module, 1GB PC3-8500 1066MHz DDR3 UDIMM • MT 3317: • MT 4013: A7U A7F A7S A7D A7Y B2U B2F B2S • MT 5043: A3U A3F A3S A3D A3Y ADB • MT 5237: • MT 5393: • MT 6674: A6U A6F A6S A6D A6Y AJQ AUA AVA	46R3322	2
4	Memory module, 2GB PC3-8500 1066MHz DDR3 UDIMM • MT 3317: • MT 4013: A3T A4A A5A A9T B1Q B3U B3F B4U B4F • MT 5043: A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A7V AEU AEF AES AFU AFF AFS ACB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA • MT 5393: A1G A2G A4G • MT 6674: A8U A8F A9A A9Q AAV A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AQQ ANU ANF ANS AND ANY ALT ALB ARU ARF ARS ASU ASF ASS ATA BDQ BEQ BFQ BHQ BJQ B1V B2V B3V B4V B8V B9V BAV BBV BCQ BCV	46R3323	2
4	Memory module, 1GB PC3-10600 1333MHz DDR3 UDIMM • MT 3317: A1P A2P • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674: AGH AKQ	64Y6648	2
4	Memory module, 2GB PC3-10600 1333MHz DDR3 UDIMM • MT 3317: • MT 4013: A6A A8T • MT 5043: A1U A1F A1S A1D A1Y A9H A8V AGU AGF AGS AAB ABB • MT 5237: ADT AET • MT 5393: A3G • MT 6674: A4U A4F A4S A4D A4Y ABU ABF ABS ABL ABD ABY APU APF APS APD APY APQ AWT BGQ B5V B6V B7V	64Y6649	2
5	Optical drive, DVD-ROM Drive - 16x/48x - SATA • MT 3317: • MT 4013: A7U A7F A7S A7D A7Y • MT 5043: A7V ACB ADB • MT 5237: • MT 5393: • MT 6674: A6U A6F A6S A6D A6Y AGH BFQ BHQ B1V B4V B5V B6V B9V BAV	71Y5543	2

Item #	FRUs	FRU #	CRU
5	Optical drive, DVD Recordable Rambo 8 - SATA 12XRAM write • MT 3317: A1P A2P • MT 4013: A3T A4A A5A A6A A9T A8T B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BEQ BGQ B2V B3V B7V B8V BBV BCQ BCV	71Y5545	2
5	Optical drive, DVD-ROM Drive - 16x/48x - SATA • MT 3317: • MT 4013: A7U A7F A7S A7D A7Y • MT 5043: A7V ACB ADB • MT 5237: • MT 5393: • MT 6674: A6U A6F A6S A6D A6Y AGH BFQ BHQ B1V B4V B5V B6V B9V BAV	41N3325	2
5	Optical drive, DVD recordable Rambo 8 - SATA 12XRAM write • MT 3317: A1P A2P • MT 4013: A3T A4A A5A A6A A9T A8T B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BEQ BGQ B2V B3V B7V B8V BBV BCQ BCV	43C1042	2
6	FDD/card reader, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9665	2

Item #	FRUs	FRU #	CRU
7	Front bezel assembly Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9662	1
8	Internal speaker 400mm --optional • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9091	2
10	Battery 3V- Lithium • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	45C1566	1
11	Hard disk drive, SATA 160GB 7200RPM / 3Gb / 8M • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	40Y9035	2
11	Hard disk drive, SATA 160GB 7200RPM / 3Gb / 8M • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	53Y6837	2

Item #	FRUs	FRU #	CRU
11	Hard disk drive, SATA 250GB 7200RPM / 3Gb / 8M • MT 3317: • MT 4013: A7U A7F A7S A7D A7Y B1Q B2U B2F B2S • MT 5043: A3U A3F A3S A3D A3Y AEU AEF AES AFU AFF AFS • MT 5237: AAU AAF AAS • MT 5393: A1G • MT 6674: A6U A6F A6S A6D A6Y A3U A3F A3S A3D A3Y AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ARU ARF ARS ASU ASF ASS BDQ BEQ BHQ BJQ	40Y9036	2
11	Hard disk drive, SATA 250GB 7200RPM / 3Gb / 8M • MT 3317: • MT 4013: A7U A7F A7S A7D A7Y B1Q B2U B2F B2S • MT 5043: A3U A3F A3S A3D A3Y AEU AEF AES AFU AFF AFS • MT 5237: AAU AAF AAS • MT 5393: A1G • MT 6674: A6U A6F A6S A6D A6Y A3U A3F A3S A3D A3Y AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ARU ARF ARS ASU ASF ASS BDQ BEQ BHQ BJQ	45K0408	2
11	Hard disk drive, SATA 320GB 7200RPM / 3Gb / 8M • MT 3317: A1P A2P • MT 4013: A3T A4A A5A A6A A9T A8T B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A7V A8V AGU AGF AGS AAB ACB ADB AHB AJB • MT 5237: A3T A4A A9A ABA ADT AET • MT 5393: A2G A4G • MT 6674: A4U A4F A4S A4D A4Y A8U A8F A9A A9Q AAV AFU AFF AFS AFY AFA AGH ALT ALB ATA AUA AVA AWT BFQ B1V B4V B5V B6V B9V BAV BBV BCQ BCV	87H4891	2
11	Hard disk drive, SATA 320GB 7200RPM / 3Gb / 8M • MT 3317: A1P A2P • MT 4013: A3T A4A A5A A6A A9T A8T B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A7V A8V AGU AGF AGS AAB ACB ADB AHB AJB • MT 5237: A3T A4A A9A ABA ADT AET • MT 5393: A2G A4G • MT 6674: A4U A4F A4S A4D A4Y A8U A8F A9A A9Q AAV AFU AFF AFS AFY AFA AGH ALT ALB ATA AUA AVA AWT BFQ B1V B4V B5V B6V B9V BAV BBV BCQ BCV	45K0409	2

Item #	FRUs	FRU #	CRU
11	Hard disk drive, SATA 500GB 7200RPM / 3Gb / 16M • MT 3317: • MT 4013: B3U B3F • MT 5043: A9H ABB • MT 5237: • MT 5393: A3G • MT 6674: ABU ABF ABS ABL ABD ABY BGQ B2V B3V B7V B8V	41X5582	2
11	Hard disk drive, SATA 500GB 7200RPM / 3Gb / 16M • MT 3317: • MT 4013: B3U B3F • MT 5043: A9H ABB • MT 5237: • MT 5393: A3G • MT 6674: ABU ABF ABS ABL ABD ABY BGQ B2V B3V B7V B8V	45K0410	2
11	Hard disk drive, SATA 1TB 7200RPM / 3Gb / 32M • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	45C5973	2
11	Hard disk drive, SATA 1TB 7200RPM / 3Gb / 32M • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	45K0412	2
13	Intrusion switch assembly Tamdhu 475mm --Optional • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	39K5022	2

Item #	FRUs	FRU #	CRU
13	Intrusion switch assembly • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	41R6116	2
14	System fan (no fan grill) • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9908	2
15	Power supply, 280 Watt ATX power supply; (Standard; Robust) • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1P A1Y A3U A3F A3S A3P A3Y A4U A4F A4S A4P A4Y A5U A5F A5S A5P A5Y AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A9Q AAV AGH AJQ AKQ AQQ APQ ALB BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	45J9436	2
15	Power supply, 280W Watt ATX power supply (85%)- Standard, Robust, JP • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1P A1Y A3U A3F A3S A3P A3Y A4U A4F A4S A4P A4Y A5U A5F A5S A5P A5Y AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A9Q AAV AGH AJQ AKQ AQQ APQ ALB BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	45J9431	2

Mechanical FRUs

The FRUs listed in the following tables are not illustrated.

Mechanical FRUs	FRU #	CRU
FRU, front fan (with fan bracket) • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9599	2
FRU, L1 -models with NO FDD/card reader, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9664	2
FRU, shield, 5.25 EMC FOR 1st ODD bay • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	41N8080	1
FRU, second HDD bracket assembly for Tamdhu • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	41R6106	1
FRU, cable -SATA 457mm (RoHS) for ODD • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9013	2

Mechanical FRUs	FRU #	CRU
FRU, 2st HDD SATA cable, 120mm, 1 latching for device, RoHS • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	41R3328	2
FRU, rear USB 2 ports II HP 300mm • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	42Y8005	2
FRU, internal speaker, cable assembly, 9*5_400 • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9091	2
FRU, Sunix PCI to parallel port card - chip update (FH) ® • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	71Y5498	2
FRU, Dash Marvell Ethernet card ATX Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	53Y4008	1

Mechanical FRUs	FRU #	CRU
FRU, cable-SATA 250mm (RoHS) for 1st HDD • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9012	2
FRU, HDD tray, Tamdhu • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	41R6291	1
FRU, temp sense cable (6 pin 460 mm) • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45J9495	2
FRU, power switch cable, 760mm, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45J9512	2
FRU, ODD door assembly, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9663	1

Mechanical FRUs	FRU #	CRU
FRU, USB cover, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9666	1
FRU, top handle assembly, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9667	1
FRU, no FDD cover assembly, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9664	1
FRU, rear I/O shield, ATX, for RS760 • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45K6268	1
FRU. front I/O cable_R (Tampa_U420_A530)_ESD_NUD • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45J9592	2

Mechanical FRUs	FRU #	CRU
FRU, Tamdhu chassis primary HDD cage • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45K6272	1
FRU, front bezel with ODD door assembly, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	43N9694	1
FRU, Tamdhu rubber foot (for acoustic improvement) • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45K6278	2
FRU, Tamdhu III chassis, Tampa • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45K6346	2
FRU, cable clip FCW-29 • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45K6365	2

Mechanical FRUs	FRU #	CRU
FRU, LI 350 mm rear COM2 cable II mini ® • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	41R8548	2
FRU, retainer, card reader/ODD/FDD, Tamdhu III • MT 3317: all models • MT 4013: all models • MT 5043: all models • MT 5237: all models • MT 5393: all models • MT 6674: all models	45K6540	2

Keyboard and Mouse

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
US English • MT 3317: • MT 4013: A4A A7U A5A A6A B1Q B2U B3U B4U • MT 5043: A1U A3U A4U A5U A9H AEU AFU AGU • MT 5237: A4A A9A AAU ABA • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A6U A8U A9A A9Q ABU ABL A3U AFU AFA AGH AJQ AKQ AQQ ANU APU APQ ARU ASU ATA AUA AVA BDQ BEQ BFQ BGQ BHQ BJQ BCQ	41A5289	1
Brazilian Portuguese • MT 3317: A1P A2P • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5294	1
Chinese/US • MT 3317: • MT 4013: • MT 5043: A7V A8V AAB ABB ACB ADB AHB AJB • MT 5237: • MT 5393: • MT 6674: AAV ALB B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCV	41A5296	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
French Canadian • MT 3317: • MT 4013: A7F B2F B3F B4F • MT 5043: A1F A3F A4F A5F AEF AFF AGF • MT 5237: AAF • MT 5393: • MT 6674: A4F A6F A8F ABF A3F AFF ANF APF ARF ASF	41A5301	1
French Canadian • MT 3317: • MT 4013: A7F B2F B3F B4F • MT 5043: A1F A3F A4F A5F AEF AFF AGF • MT 5237: AAF • MT 5393: • MT 6674: A4F A6F A8F ABF A3F AFF ANF APF ARF ASF	41A5302	1
Korean • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5311	1
LA Spanish • MT 3317: • MT 4013: A7S A7D A7Y B2S • MT 5043: A1S A1D A1Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y AES AFS AGS • MT 5237: AAS • MT 5393: • MT 6674: A4S A4D A4Y A6S A6D A6Y ABS ABD ABY A3S A3D A3Y AFS AFY ANS AND ANY APS APD APY ARS ASS	41A5312	1
Thailand • MT 3317: • MT 4013: A3T A9T A8T • MT 5043: • MT 5237: A3T ADT AET • MT 5393: • MT 6674: ALT AWT	41A5324	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
Arabic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5290	1
Arabic (New) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	45J4880	1
Arabic/French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5291	1
Belgium English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5293	1
Belgium French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5292	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
Bulgarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5295	1
Czech (ABB) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5297	1
Danish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5298	1
Dutch • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5299	1
Estonia • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	51J0059	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5300	1
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5303	1
Greek • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5304	1
Greek/US • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5305	1
Hebrew • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5306	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
Hungarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5307	1
Iceland • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5308	1
Italy • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5309	1
Japanese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5310	1
Lithuanian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	45J4896	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
Norwegian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5313	1
Polish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5314	1
Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5315	1
Romanian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5317	1
Russian/Cyrillic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5318	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
Serbian/Cyrillic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5319	1
Slovak • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5320	1
Slovenian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5329	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5321	1
Swedish/Finnish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5322	1

Keyboard (Lenovo Preferred Pro USB -- without hub)	FRU #	CRU
Swiss French/German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5323	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5326	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5325	1
UK English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5327	1
US European • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5328	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
US English China • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0038	1
Brazilian Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0043	1
Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0044	1
Chinese/US • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0045	1
French Canadian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0050	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
French Canadian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0051	1
Korean • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0060	1
LA Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0061	1
Thailand • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0073	1
Japanese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0059	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Danish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0047	1
Dutch • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0048	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0049	1
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0052	1
Italy • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0058	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0070	1
Swedish/Finnish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0071	1
UK English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0076	1
US European • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0077	1
Arabic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0039	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Arabic (French) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0040	1
Belgium French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0041	1
Belgium English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0042	1
Czech (ABB) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0046	1
Greek • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0053	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Greek/US • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0054	1
Hebrew • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0055	1
Hungarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0056	1
Iceland • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0057	1
Norwegian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0062	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Polish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0063	1
Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0064	1
Romanian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0066	1
Russian/Cyrillic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0067	1
Serbian/Cyrillic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0068	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Slovak • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0069	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0075	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0074	1
Swiss French/German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0072	1
Slovenian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R0078	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
US English China • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4780	1
Brazilian Portuguese • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4785	1
Portuguese • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4786	1
Chinese/US • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4787	1
French Canadian • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4792	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
French Canadian • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4793	1
Korean • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4802	1
LA Spanish • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4803	1
Thailand • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4815	1
Japanese • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4801	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Danish • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4789	1
Dutch • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4790	1
French • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4791	1
German • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4794	1
Italy • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4800	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Spanish • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4812	1
Swedish/Finnish • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4813	1
UK English • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4818	1
US European • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4819	1
Arabic • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4781	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Arabic (French) • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4782	1
Belgium French • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4783	1
Belgium English • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4784	1
Czech (ABB) • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4788	1
Greek • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4795	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Greek/US • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4796	1
Hebrew • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4797	1
Hungarian • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4798	1
Iceland • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4799	1
Norwegian • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4804	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Polish • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4805	1
Portuguese • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4806	1
Romanian • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4807	1
Romanian • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4808	1
Russian/Cyrillic • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4809	1

Keyboard (Lenovo Fingerprint Reader USB)	FRU #	CRU
Serbian/Cyrillic • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4810	1
Slovak • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4811	1
Turkish • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4817	1
Turkish • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4816	1
Swiss French/German • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4814	1
Slovenian • MT 3317: CTO • MT 4013: CTO • MT 5043: CTO • MT 5237: CTO • MT 5393: CTO • MT 6674: CTO	57Y4820	1

Keyboard PS/2	FRU #	CRU
US English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5039	1
Arabic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5040	1
Arabic/French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5041	1
Belgium French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5042	1
Belgium English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5043	1

Keyboard PS/2	FRU #	CRU
Brazilian Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5044	1
Bulgarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5045	1
Chinese/US • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5046	1
Czech (ABB) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5047	1
Danish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5048	1

Keyboard PS/2	FRU #	CRU
Dutch • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5049	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5050	1
French Canadian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5051	1
French Canadian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5052	1
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5053	1

Keyboard PS/2	FRU #	CRU
Greek • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5054	1
Greek/US • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5080	1
Hebrew • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5055	1
Hungarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5056	1
Iceland • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5057	1

Keyboard PS/2	FRU #	CRU
Italy • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5058	1
Japanese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5059	1
Korean • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5060	1
LA Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5061	1
Norwegian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5062	1

Keyboard PS/2	FRU #	CRU
Polish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5063	1
Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5064	1
Romanian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5065	1
Russian/Cyrillic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5066	1
Serbian/Cyrillic • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5067	1

Keyboard PS/2	FRU #	CRU
Slovak • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5068	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5069	1
Swedish/Finnish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5070	1
Swiss French/German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5071	1
Thailand • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5072	1

Keyboard PS/2	FRU #	CRU
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5073	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5074	1
UK English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5075	1
US European • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5076	1
Slovenian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5077	1

Mice	FRU #	CRU
Optical wheel mouse (400DPI, USB) • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	41U3013	1
Optical wheel mouse (400DPI, USB) • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	41U3030	1
Optical wheel mouse (400DPI, USB) • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	89Y1273	1

Mice	FRU #	CRU
Optical wheel mouse (400DPI, USB) • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	89Y1274	1
Optical wheel mouse (400DPI, USB) • MT 3317: A1P A2P • MT 4013: A3T A4A A7U A7F A7S A7D A7Y A5A A6A A9T A8T B1Q B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: A1G A2G A3G A4G • MT 6674: A4U A4F A4S A4D A4Y A6U A6F A6S A6D A6Y A8U A8F A9A A9Q AAV ABU ABF ABS ABL ABD ABY A3U A3F A3S A3D A3Y AFU AFF AFS AFY AFA AGH AJQ AKQ AQQ ANU ANF ANS AND ANY APU APF APS APD APY APQ ALT ALB ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT BDQ BEQ BFQ BGQ BHQ BJQ B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCQ BCV	89Y1275	1
PS/2 three button ball mouse scroll point • MT 3317: • MT 4013: • MT 5043: A1U A1F A1S A1D A1Y A3U A3F A3S A3D A3Y A4U A4F A4S A4D A4Y A5U A5F A5S A5D A5Y A9H A7V A8V AEU AEF AES AFU AFF AFS AGU AGF AGS AAB ABB ACB ADB AHB AJB • MT 5237: • MT 5393: • MT 6674:	41R0018	1

Adapters and miscellaneous FRUs

Adapters and miscellaneous FRUs	FRU #	CRU
HD 3470 256M 64 bit DP ATX (DP+VGA) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	46R1521	1
Nvidia Geforce 310 512M 64bit ATX (DP+VGA) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T9008	1
Display port to DVI-D dongle • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	43N9160	1
Soft modem V.90/V.44 ATX • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	46R4220	1
IEEE 1394 firewire adapter ATX (tower) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41D2781	1

Adapters and miscellaneous FRUs	FRU #	CRU
Multi-slots RTS5111F card reader with crust • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	45R8139	1
Lenovo branded speakers • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41A5334	1

Power Cords

Power Cords --primary	FRU #	CRU
Line Cord - US • MT 3317: • MT 4013: A3T A4A A7U A7F A7S A7Y A5A A6A A9T A8T B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1Y A3U A3F A3S A3Y A4U A4F A4S A4Y A5U A5F A5S A5Y • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: • MT 6674: A4U A4F A4S A4Y A6U A6F A6S A6Y A8U A8F A9A ABU ABF ABS ABL ABY A3U A3F A3S A3Y AFU AFF AFS AFY AFA ANU ANF ANS ANY APU APF APS APY ALT ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT	41R3184	1
Line Cord - Brazil (Portuguese) • MT 3317: A1P A2P • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3270	1
Line Cord - Brazil (Portuguese) • MT 3317: A1P A2P • MT 4013: • MT 5043: A1P A3P A4P A5P • MT 5237: • MT 5393: • MT 6674:	45J9595	1

Power Cords --primary	FRU #	CRU
Line Cord - LA High Volt (APU) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3176	1
Line Cord - Korea • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3260	1
Line Cord - UK, Ireland, Singapore, Malaysia, Brunei • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3224	1
Line Cord - Taiwan • MT 3317: • MT 4013: • MT 5043: A7V A8V • MT 5237: • MT 5393: • MT 6674: AAV B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCV	41R3278	1
Line Cord - South Africa • MT 3317: • MT 4013: A4A A5A A6A • MT 5043: • MT 5237: A4A A9A ABA • MT 5393: A1G A2G A3G A4G • MT 6674: A9A AFA ATA AUA AVA	41R3220	1

Power Cords --primary	FRU #	CRU
Line Cord - India • MT 3317: • MT 4013: B1Q • MT 5043: • MT 5237: • MT 5393: • MT 6674: A9Q AJQ AKQ AQQ APQ BDQ BEQ BFQ BGQ BHQ BJQ BCQ	41R3341	1
Line Cord - China • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3256	1
Line Cord - Japan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3248	1
Line Cord - Italy • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3232	1
Line Cord - Indonesia, Laos, Cambodia, and Vietnam A models • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3208	1

Power Cords --primary	FRU #	CRU
Line Cord - Denmark • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: A1G A2G A3G A4G • MT 6674:	41R3212	1
Line Cord - Switzerland • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: A1G A2G A3G A4G • MT 6674:	41R3228	1
Line Cord - Israel • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: A1G A2G A3G A4G • MT 6674:	41R3236	1
Line Cord - A models • MT 3317: • MT 4013: • MT 5043: • MT 5237: A4A A9A ABA • MT 5393: • MT 6674: A9A AFA ATA AUA AVA	41R3208	1
Line Cord - Thailand • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	43N9029	1

Power Cords --secondary	FRU #	CRU
Line Cord - US • MT 3317: • MT 4013: A3T A4A A7U A7F A7S A7Y A5A A6A A9T A8T B2U B2F B2S B3U B3F B4U B4F • MT 5043: A1U A1F A1S A1Y A3U A3F A3S A3Y A4U A4F A4S A4Y A5U A5F A5S A5Y • MT 5237: A3T A4A A9A AAU AAF AAS ABA ADT AET • MT 5393: • MT 6674: A4U A4F A4S A4Y A6U A6F A6S A6Y A8U A8F A9A ABU ABF ABS ABL ABY A3U A3F A3S A3Y AFU AFF AFS AFY AFA ANU ANF ANS ANY APU APF APS APY ALT ARU ARF ARS ASU ASF ASS ATA AUA AVA AWT	41R3185	1
Line Cord - China • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3257	1
Line Cord - Brazil (Portuguese) • MT 3317: A1P A2P • MT 4013: • MT 5043: A1P A3P A4P A5P • MT 5237: • MT 5393: • MT 6674:	41R3271	1
Line Cord - LA High Volt (APU) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3177	1
Line Cord - Korea • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3261	1

Power Cords --secondary	FRU #	CRU
Line Cord - Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3279	1
Line Cord - South Africa • MT 3317: • MT 4013: • MT 5043: • MT 5237: A4A A9A ABA • MT 5393: • MT 6674: AAV B1V B2V B3V B4V B5V B6V B7V B8V B9V BAV BBV BCV	41R3221	1
Line Cord - India • MT 3317: • MT 4013: A4A A5A A6A B1Q • MT 5043: • MT 5237: • MT 5393: A1G A2G A3G A4G • MT 6674: A9A AFA ATA AUA AVA	41R3175	1
Line Cord - Japanese and Japanese English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674: A9Q AJQ AKQ AQQ APQ BDQ BEQ BFQ BGQ BHQ BJQ BCQ	41R3249	1
Line Cord - ANZ • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3197	1

Power Cords --secondary	FRU #	CRU
Line Cord - Hong Kong • MT 3317: • MT 4013: • MT 5043: AAB ABB ACB ADB AHB AJB • MT 5237: • MT 5393: • MT 6674:	41R3225	1
Y cable for Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	43N9044	1
Line Cord - Italy • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3233	1
Line Cord - Indonesia, Laos, Cambodia, and Vietnam A models • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: A1G A2G A3G A4G • MT 6674:	41R3209	1
Line Cord - Denmark • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: A1G A2G A3G A4G • MT 6674:	41R3213	1

Power Cords --secondary	FRU #	CRU
Line Cord - Switzerland • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: A1G A2G A3G A4G • MT 6674:	41R3229	1
Line Cord - Israel • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	41R3237	1
Line Cord - Austria, Belgium, Croatia, Czechoslovakia, Finland, France, Germany, Hungary, Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden • MT 3317: • MT 4013: • MT 5043: • MT 5237: A4A A9A • MT 5393: • MT 6674: A9A AFA	41R3209	1
Line Cord - Thailand • MT 3317: • MT 4013: A3T • MT 5043: • MT 5237: • MT 5393: • MT 6674:	43N9030	1

Recovery discs

Windows XP Professional Recovery CD

Windows XP Professional	FRU #	CRU
US English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8909	1

Windows XP Professional	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y9167	1
Traditional Chinese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8905	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8906	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8907	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8908	1

Windows XP Professional	FRU #	CRU
Arabic enabled • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0225	1
Simplified Chinese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0226	1
Czech • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0227	1
Greek • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0228	1
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y9306	1

Windows XP Professional	FRU #	CRU
Hebrew • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0230	1
Hungarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0231	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0232	1
Japan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0233	1
Polish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0234	1

Windows XP Professional	FRU #	CRU
Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0235	1
Russian English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0236	1
Russian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0237	1
Slovenian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0238	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0239	1

Windows Vista 32 Home Basic Recovery CD

Windows Vista 32 Home Basic	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1905	1

Windows Vista Home Basic 32 with MS office starter 2010 Recovery CD

Windows Vista Home Basic 32 with MS office starter 2010	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5837	1

Windows Vista Business 32 Recovery CD

Windows Vista Business 32	FRU #	CRU
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1903	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1898	1

Windows Vista Business 32	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1899	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1900	1
Dutch • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1901	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1902	1
C&L Nordics: DK/FI/SV/NO/EN • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1904	1

Windows Vista Business 32 Office Starter 2010 Recovery CD

Windows Vista Business 32 Office Starter 2010	FRU #	CRU
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5835	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5830	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5831	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5832	1
Dutch • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5833	1

Windows Vista Business 32 Office Starter 2010	FRU #	CRU
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5834	1
C&L1 Nordics: DK/FI/SV/NO/EN • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5836	1

Windows 7 Home Basic 32 Recovery CD

Windows 7 Home Basic 32	FRU #	CRU
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8925	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8924	1
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0471	1

Windows 7 Home Basic 32	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8923	1
Arabic enabled • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0339	1
Simplified Chines • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0340	1
Russian English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0341	1
Russian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0342	1

Windows 7 Home Basic 32	FRU #	CRU
Serbian-Latin • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0343	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0344	1

Windows 7 Home Basic 32 Office Starter 2010 Recovery CD

Windows 7 Home Basic 32 Office Starter 2010	FRU #	CRU
Arabic enabled • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5866	1
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0472	1
Simplified Chines • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5868	1

Windows 7 Home Basic 32 Office Starter 2010	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5869	1
Russian English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5870	1
Russian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5871	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5872	1
Serbian-Latin • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5873	1

Windows 7 Home Basic 32 Office Starter 2010	FRU #	CRU
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5874	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5875	1

Windows 7 Home Premium 32 Recovery CD

Windows 7 Home Premium 32	FRU #	CRU
English • MT 3317: • MT 4013: A7U B4U • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8933	1
French • MT 3317: • MT 4013: A7F B4F • MT 5043: • MT 5237: • MT 5393: A2G A3G • MT 6674:	71Y8929	1
Spanish • MT 3317: • MT 4013: A7S A7D A7Y • MT 5043: • MT 5237: • MT 5393: A2G A3G • MT 6674:	71Y8932	1

Windows 7 Home Premium 32	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0473	1
Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8927	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8928	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: AJB • MT 5237: • MT 5393: • MT 6674:	71Y8930	1
Korean • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8931	1

Windows 7 Home Premium 32	FRU #	CRU
Simplified Chinese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0405	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0406	1
Japan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0407	1
Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0346	1
C&L EMEA (FR NL GR IT EN) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1281	1

Windows 7 Home Premium 32 Office Starter 2010 Recovery CD

Windows 7 Home Premium 32 Office Starter 2010	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0474	1
Simplified Chinese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5877	1
Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5878	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5879	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5880	1

Windows 7 Home Premium 32 Office Starter 2010	FRU #	CRU
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5881	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5882	1
Korea • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5883	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5884	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5885	1

Windows 7 Home Premium 32 Office Starter 2010	FRU #	CRU
Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5886	1
C&L EMEA (FR NL GR IT EN) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5887	1

Windows 7 Professional 32 Recovery CD

Windows 7 Professional 32	FRU #	CRU
US English • MT 3317: • MT 4013: A4A A5A A6A B2U • MT 5043: A1U A3U A4U A5U A9H AEU AFU AGU • MT 5237: A9A AAU ABA • MT 5393: A4G • MT 6674: A4U A6U A8U A9A A9Q ABU ABL A3U AFU AFA AGH AQQ ANU APU APQ ARU ASU ATA AUA AVA BDQ BEQ BFQ BGQ BHQ BJQ BCQ	71Y8921	1
French • MT 3317: • MT 4013: B2F • MT 5043: A1F A3F A4F A5F AEF AFF AGF • MT 5237: AAF • MT 5393: A4G • MT 6674: A4F A6F A8F ABF A3F AFF ANF APF ARF ASF	71Y8917	1
Spanish • MT 3317: • MT 4013: B2S • MT 5043: • MT 5237: • MT 5393: A4G • MT 6674:	71Y8920	1

Windows 7 Professional 32	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8916	1
Brazilian Portuguese • MT 3317: A1P A2P • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0469	1
Brazilian Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8919	1
Brazilian Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8915	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: AHB • MT 5237: • MT 5393: • MT 6674:	71Y8918	1

Windows 7 Professional 32	FRU #	CRU
Arabic enabled • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0276	1
Simplified Chines • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0277	1
Czech • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0278	1
Greek • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0279	1
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0280	1

Windows 7 Professional 32	FRU #	CRU
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0281	1
Hebrew • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0282	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0283	1
Hungarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0284	1
Japan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0285	1

Windows 7 Professional 32	FRU #	CRU
Korea • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0286	1
Polish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0287	1
Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0288	1
Russian English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0289	1
Slovakian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0290	1

Windows 7 Professional 32	FRU #	CRU
Slovenian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0291	1
Serbian-Latin • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0292	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0293	1
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0295	1
C&L EMEA (FR NL GR IT EN) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1278	1

Windows 7 Professional 32 with MS office starter 2010 Recovery CD

Windows 7 Professional 32 with MS office starter 2010	FRU #	CRU
Arabic enabled • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5839	1
Brazil • MT 3317: A1P A2P • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0470	1
Simplified Chines • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5841	1
Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5842	1
Czech • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5843	1

Windows 7 Professional 32 with MS office starter 2010	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5844	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5845	1
Greek • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5846	1
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5847	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5848	1

Windows 7 Professional 32 with MS office starter 2010	FRU #	CRU
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5849	1
Hebrew • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5850	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5851	1
Hungarian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5852	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5853	1

Windows 7 Professional 32 with MS office starter 2010	FRU #	CRU
Korea • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5854	1
Polish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5855	1
Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5856	1
Russian English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5857	1
Slovakian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5858	1

Windows 7 Professional 32 with MS office starter 2010	FRU #	CRU
Slovenian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5859	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5860	1
Serbian-Latin • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5861	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5862	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5863	1

Windows 7 Professional 32 with MS office starter 2010	FRU #	CRU
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5864	1
C&L EMEA (FR NL GR IT EN) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5865	1

Windows 7 Professional 64 Recovery CD

Windows 7 Professional 64	FRU #	CRU
US English • MT 3317: • MT 4013: B3U • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8944	1
French • MT 3317: • MT 4013: B3F • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8941	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8943	1

Windows 7 Professional 64	FRU #	CRU
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8940	1
Brazilian Portuguese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0477	1
Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8939	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8942	1
Simplified Chinese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0377	1

Windows 7 Professional 64	FRU #	CRU
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0378	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0379	1
Japanese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0380	1
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0381	1
C&L Switzerland (EN FR GR IT) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0382	1

Windows 7 Professional 64 with MS office starter 2010 Recovery CD

Windows 7 Professional 64 with MS office starter 2010	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0478	1
Simplified Chinese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5898	1
Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5899	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5900	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5901	1

Windows 7 Professional 64 with MS office starter 2010	FRU #	CRU
German • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5902	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5903	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5904	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5905	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5906	1

Windows 7 Professional 64 with MS office starter 2010	FRU #	CRU
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5907	1
C&L Switzerland (EN FR GR IT) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5908	1

Windows 7 Home Premium 64 Recovery CD

Windows 7 Home Premium 64	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0479	1
Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0354	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0355	1

Windows 7 Home Premium 64	FRU #	CRU
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0356	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0357	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0358	1
Japanese • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0359	1
Korean • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0360	1

Windows 7 Home Premium 64	FRU #	CRU
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0387	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0388	1
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0390	1
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y1282	1

Windows 7 Home Premium 64 with MS Office Starter 2010 Recovery CD

Windows 7 Home Premium 64 office starter	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0480	1

Windows 7 Home Premium 64 office starter	FRU #	CRU
Taiwan • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5910	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5911	1
French • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5912	1
Hong Kong • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5913	1
Italian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5914	1

Windows 7 Home Premium 64 office starter	FRU #	CRU
Korean • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5915	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5916	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5917	1
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5918	1
C&L Nordics (EN DK FI NO SV) • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5919	1

Windows 7 Starter 32 Recovery CD

Windows 7 Starter 32	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0475	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8935	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8936	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	71Y8937	1
Arabic enabled • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0348	1

Windows 7 Starter 32	FRU #	CRU
Russian English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0349	1
Russian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0350	1
Serbian-Latin • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0351	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	89Y0352	1

Windows 7 Starter 32 Office Starter Recovery CD

Windows 7 Starter 32 Office Starter	FRU #	CRU
Arabic enabled • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5888	1

Windows 7 Starter 32 Office Starter	FRU #	CRU
Brazil • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T0476	1
India English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5890	1
Russian English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5891	1
Russian • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5892	1
Spanish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5893	1

Windows 7 Starter 32 Office Starter	FRU #	CRU
Serbian-Latin • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5894	1
Turkish • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5895	1
English • MT 3317: • MT 4013: • MT 5043: • MT 5237: • MT 5393: • MT 6674:	03T5896	1

Chapter 10. Additional service information

This chapter provides additional information that the service representative might find helpful.

Security features

Security features in this section include the following:

- Passwords
- Vital Product Data
- Management Information Format (MIF)

Hardware controlled Passwords

Hardware controlled passwords are set using the Setup Utility program. For more information about passwords, see “Using passwords” on page 39.

Operating system password

An operating system password is very similar to a power-on password and denies access to the computer by an unauthorized user when the password is activated. The computer is unusable until the password is entered and recognized by the computer.

Vital product data

Each computer has a unique Vital Product Data (VPD) code stored in the nonvolatile memory on the system board. After you replace the system board, the VPD must be updated. To update the VPD, see “Updating (flashing) BIOS from a disc” on page 203.

BIOS levels

An incorrect level of BIOS can cause false errors and unnecessary FRU replacement. Use the following information to determine the current level of BIOS installed in the computer, the latest BIOS available for the computer, and where to obtain the latest level of BIOS.

- To determine the current Level of BIOS:
  - Start the Setup Utility.
  - Select System Information on the Main setup screen.
- Sources for obtaining the latest level BIOS available
  1. Lenovo support web site: `http://www.lenovo.com/support/`
  2. Lenovo Customer Support Center
  3. Levels 1 and 2 Support

To update (flash) the BIOS, see “Updating (flashing) BIOS from a disc” on page 203.

Updating (flashing) BIOS from a disc

This section provides instructions on how to update (flash) BIOS from a disc. System program updates are available at:
http://www.lenovo.com/support

To update (flash) BIOS from a disc:

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1. Make sure the optical drive you want to use is set as the first boot device in the startup device sequence. See “Viewing or changing the startup device sequence” on page 41.
2. Make sure the computer is turned on and insert the disc into the optical drive. The update begins.

   Note: You can insert the disc into the optical drive when you are setting the startup device sequence. However, if you insert the disc into the optical drive when you have already entered the operating system, you need to restart the computer to begin the update process.
3. When prompted to change the serial number, press N. If you want to change the serial number, press Y when prompted. Then, type in the serial number and press Enter.
4. When prompted to change the machine type/model, press N. If you want to change the machine type/model, press Y when prompted. Then, type in the machine type/model and press Enter.
5. Follow the instructions on the screen to complete the update.

Updating (flashing) BIOS from your operating system

Note: Because Lenovo makes constant improvements to the Web site, the Web page contents are subject to change without notice, including the contents referenced in the following procedure.

To update (flash) BIOS from your operating system:

1. Go to http://www.lenovo.com/support.
2. Do the following to locate the downloadable files for your machine type:
   a. In the **Enter a product number** field, type your machine type and click **Go**.
   b. Click **Downloads and drivers**.
   c. Select **BIOS** in the **Refine results** field to easily locate all the BIOS related links.
   d. Click the BIOS update link.
   e. Click the TXT file that contains the instructions for updating (flashing) BIOS from your operating system.
3. Print these instructions. This is very important because they are not on the screen after the download begins.
4. Follow the printed instructions to download, extract, and install the update.

Recovering from a POST/BIOS update failure

If the power to your computer is interrupted while POST/BIOS is being updated (flash update), your computer might not restart correctly. If this happens, perform the following procedure which is commonly called Boot-block Recovery.

1. Turn off the computer and any attached devices, such as printers, monitors, and external drives.
2. Unplug all power cords from electrical outlets, and remove the computer cover. See “Removing the computer cover” on page 68.
3. Access the system board.
4. Locate the Clear CMOS /Recovery jumper on the system board. See “Locating parts on the system board” on page 70.
5. Remove any cables that might prevent your access to the Clear CMOS /Recovery jumper.
6. Move the jumper from the standard position (pin 1 and pin 2) to pin 2 and pin 3.
7. Reconnect any cables that were disconnected. See “Completing the FRU replacement” on page 97.
8. Reinstall the computer cover and reconnect the power cords for the computer and monitor to electrical outlets.

9. Turn on the computer and the monitor. Then, insert the POST/BIOS update (flash update) disc into the optical drive.
10. Turn the computer off and back on again. The recovery begins.
11. The recovery session will take two to three minutes. During this time you will hear a series of beeps. After the update session is completed, there will be no video, the series of beeps will end, and the system will automatically turn off.
12. Repeat steps 2 through 5.
13. Move the jumper back to the standard position (pin 1 and pin 2).
14. Reconnect any cables that were disconnected. See “Completing the FRU replacement” on page 97.
15. Reinstall the computer cover and reconnect the power cords for the computer and monitor to electrical outlets.
16. Turn on the computer to restart the operating system and remove the disc from the optical drive.

Power management

Power management reduces the power consumption of certain components of the computer such as the system power supply, processor, hard disk drives, and some monitors.

Automatic configuration and power interface (ACPI) BIOS

Being an ACPI BIOS system, the operating system is allowed to control the power management features of the computer and the setting for Advanced Power Management (APM) BIOS mode is ignored. Not all operating systems support ACPI BIOS mode.

Automatic Power-On features

The Automatic Power-On features within the Power Management menu allow you to enable and disable features that turn on the computer automatically.

- **RTC resume**: You can specify a date and time at which the computer will be turned on automatically. This can be either a single event or a daily event.
- **Wake on LAN**: If the computer has a properly configured token-ring or Ethernet LAN adapter card that is Wake on LAN-enabled and there is remote network management software, you can use the Wake on LAN feature. When you set Wake on LAN to **Enabled**, the computer will turn on when it receives a specific signal from another computer on the local area network (LAN).

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